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In Plain English

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Unleash Your TVs,
PCs & Peripherals

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For the best prices on the latest hardware, visit the Where To Buy area at SmartComputing.com (www.smartcomputing.com).

Quick Studies

Email

Store Documents In Web Email

Security

Restrict MAC Addresses

Intuit Quicken 2008

Cash Flow Center Alerts



Consumer Electronics

We tell you what you really need to know about various types of consumer electronics products. This month, we cover:

iPod Speaker Docks | HTBs (Home Theater In A Box) | Universal Remote Controls

EDITOR'S NOTE

Remember the phone cord?

I'm not talking about the cord that connects your phone base to the wall plug. Nor am I referring to the dinky, 2-foot handset cord on the phone in the bedroom. I'm talking about the phone cord—the 8-, 10-, or maybe 15-foot spiral handset cord that would let you walk-'n'-talk from one end of the kitchen to the other end of the living room before it yanked the handset out of your grip. (The phone was tucked on your shoulder, wasn't it?)

That ridiculously long, oft-tangled phone cord illustrates an important truth that is driving innovation in the PC and CE (consumer electronics) industries today: We don't like to be leashed to (or by) our electronics. We want to take the phone wherever we go. We want to put our computers and printers in separate rooms. We want to stream video from our PCs to our TVs. Most of all, we want to enjoy Internet access (via our notebooks) anywhere in the house.

With our April issue ("The Perfect Home Network"), we provided step-by-step instructions that walk you through the process of setting up wired and wireless networks. This month, we give you some tips for making the most of your wireless network and fill you in on some new wireless technologies, such as Wireless USB and phones that use your wireless network. If you're still tied to a wired network (or that corded kitchen phone), this issue ought to convince you to go wireless.

Joshua Gulick

Corrections/Clarifications

In our May 2008 issue (pg. 8), we mistakenly bemoaned the Apple MacBook Air's lack of a microphone. In fact, the Air includes a built-in microphone.



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Computer Power User • Pimp My Rig

Whether you're a seasoned modding veteran who finds the word "stock" offensive or are interested in beginning your modding career, we have performance and vanity modding tips that can help.

First Glimpse •

Enhance Your Summer With Mobile Gadgets

Summertime brings forth a flurry of outdoor activities. Whether you plan a trip to the beach or an afternoon at the baseball park, your summer plans can be enhanced with CE devices and technologies such as laptops, MP3 players, smartphones, GPS, and Wi-Fi. In this issue of *First Glimpse*, we'll show you how to enjoy a better summer with mobile gadgets.

PC Today • Traveler's Toolkit

For business travelers, success when hitting the road—or the skies—requires having the right tools. The May issue of *PC Today* points out some of the best mobile devices and accessories, keeping durability and space-saving in mind.

*Compiled by Christian Perry**Illustrated by Lori Garris*

DESKTOPS & LAPTOPS

Dell Set To Board Ultra-Portable Train

The ultra-portable laptop train continues to gain steam, and details surrounding two upcoming Dell Latitude models suggest that the PC maker sees plenty of opportunity for the market segment, particularly in the consumer space.

Expected to be released around September, the Latitude E4200 and E4300 will take the Latitude to an area not typically seen in the series, as early, leaked images show unique styling that's geared more toward consumers, rather than the business-heavy styling of previous Latitude models. The images hint that the ultra-portables will be available in an array of colors, including blue and different shades of red.

The 2.2-pound E4200 will include a 12.1-inch, backlit WXGA (Wide Extended Graphics Array) monitor with a resolution of 1,280 x 800. The laptop will use the fifth generation of Intel's Centrino platform, which is code-named Montevina and set to be released this summer. The platform supports the use of ULV (ultra-low voltage) processors, which will help the ultra-portables extend their battery life.

This model is expected to use 800MHz DDR3 (double-data-rate 3) memory (with a maximum capacity of 5GB), but the most intriguing feature will be on the storage front, where the E4200 will include either a 32GB or 64GB SSD (solid-state drive). The E4200 will be packed with other useful features, as well, including UWB (Ultra Wideband), DisplayPort, Bluetooth 2.1, integrated 802.11n wireless, SD (Secure Digital) card/MMC (MultiMedia Card) reader,

two USB 2.0 ports, Gigabit Ethernet, FireWire, and more.

For users who aren't quite as concerned with energy and weight but are interested in a bigger display and other more powerful options, Dell's upcoming E4300 might be a better fit. This 3-pound model features a 13.3-inch LED (light-emitting diode) backlit WXGA display and supports standard-voltage CPUs, as well as standard hard drives (up to 250GB

at 5,400rpm or up to 200GB at 7,200rpm), although SSDs also will be supported.

The E4300 also differs from the E4200 in that it will have an integrated DVD burner or Blu-ray Disc drive, whereas the E4200 has no internal media bay. Also, the E4200 will include only a touchpad, while the E4300 will have both a touchpad and a pointing stick.

Prices for these sleek systems were not yet available at press time. ■



STORAGE

The State Of Solid-State

With the prices of traditional hard drives continuing to drop faster than a lead balloon, manufacturers are seeking technologies that not only can surpass those drives in performance and flexibility, but that can also deliver a higher financial return. On both counts, the SSD, or solid-state drive, appears to be the technology of choice.

In December, Intel unveiled its Z-P140 PATA (Parallel Advanced Technology Attachment) SSD line of tiny drives with relatively tiny (2GB and 4GB) capacities. Although the drives are smaller than a penny, their application is limited to small mobile devices—and likely expensive ones, at that. But the company has indicated that it soon plans to ship SATA (Serial ATA)-II SSDs in 1.8- and 2.5-inch sizes in capacities up to 160GB. Intel also said these drives will boast better read speeds than a competing drive from Samsung and that SSDs will see price drops of 50% in 2009 and another 50% in 2010.

OCZ also is entering the SSD arena, offering drives with capacities of 32GB and 64GB and impressive read speeds of 120MB per second and write speeds of 100MB per second. Like other SSDs, the OCZ entries have no moving parts, feature low power consumption, and have high shock resistance. ■



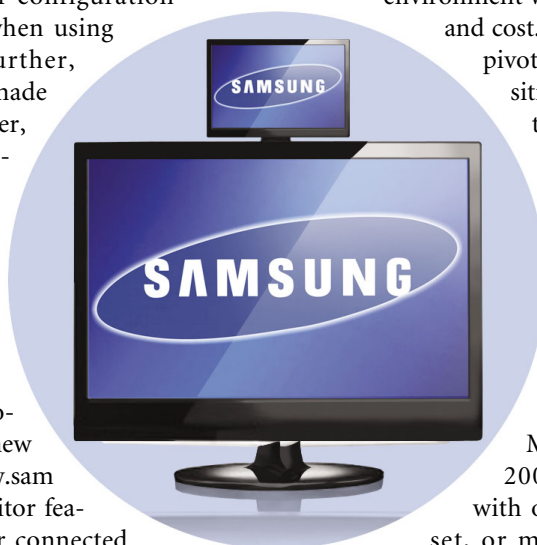
Companies such as Samsung, Intel, OCZ, and others are lining up to get a piece of the SSD (solid-state drive) pie, which looks to be offering lucrative slices in the near future as consumers move to the new technology.

DISPLAYS

Samsung Doubles The Monitor Fun

The benefits of a dual-monitor configuration are undeniable, particularly when using a computer for multitasking. Further, graphics card manufacturers have made these configurations easier than ever, offering low-cost cards with dual-monitor connections. However, simply because a graphics card can accommodate such a configuration doesn't necessarily mean the average consumer can afford two monitors or even find room for them.

Samsung has devised a unique solution to these drawbacks with its new SyncMaster 2263DX (\$549.99; www.samsung.com). This 22-inch LCD monitor features an additional 7-inch monitor connected to the display, allowing users to enjoy a dual-monitor



environment without committing to the extra space and cost. The smaller screen is attached with a pivoting, swiveling arm that lets users position it on the left, right, or even above the larger display.

The 2263DX's main screen includes HDMI (High-Definition Multimedia Interface) input and has a 160/160 viewing angle, 1,680 x 1,050 resolution, 5ms (millisecond) response time, and an 8,000:1 contrast ratio. The 7-inch screen features a resolution of 800 x 480. The monitor is optimized for Microsoft's Office Communicator 2007, which lets users communicate with others without using a phone, headset, or microphone. Also included is USB hub functionality. ■

PRINTERS & PERIPHERALS

Ditch The Ink With ZINK

Ever wonder what life would be like without ink? Placing a typically expensive order for ink cartridge replacements or performing the messy job of refilling your own ink is enough to spark plenty of thought about an inkless life. Now, thanks to ZINK, that life could become a reality.

ZINK (short for Zero Ink; www.zink.com) is a completely ink-free printing technology from ZINK Imaging that relies on a special kind of paper to perform its magic. Cyan, yellow, and magenta dye crystals are embedded inside the paper and protected by a polymer overcoat layer.

The paper appears like any other white photo paper before the printing occurs, because the dye crystals are colorless. But when a ZINK-enabled printer processes the paper, the dye crystals are activated and colorized. According to the company, these crystals—called amorphochromic crystals—are a new class of molecules invented by ZINK scientists. Further, the crystal properties were finely tuned to accurately represent the different colors of the palette to achieve high-quality, full-color digital prints.

Printers using ZINK technology are in the works, with some expected to be released soon. Although these printers

will use expensive paper, the upside is no ink costs and no messy cartridges. **I**



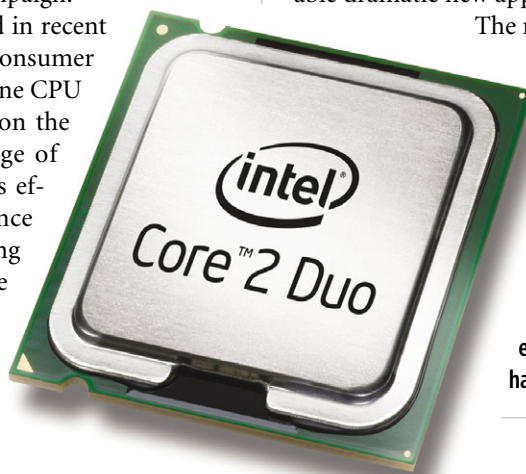
Using a new class of molecules called amorphochromic crystals, ZINK technology does away with ink by embedding these dye crystals directly inside composite material in special paper.

CPUs, CHIPS & CARDS

Big Bucks Thrown At Parallel Research

Committing a combined \$20 million over the next five years, Intel and Microsoft are looking to make serious inroads into the development of parallel computing for both consumers and businesses. The money will be used to create Universal Parallel Computing Research Centers at the University of California at Berkeley and the University of Illinois at Urbana-Champaign.

Multicore computing has exploded in recent years, with even budget models of consumer PCs featuring chips with more than one CPU core. But plenty more can be done on the programming side to take advantage of these hardware innovations, and this effort by Intel and Microsoft is evidence of that opportunity. While we're seeing both hardware and software that take advantage of dual- and quad-core configurations, future PCs will feature even more cores.



"Intel has already shown an 80-core research processor, and we're quickly moving the computing industry to a many-core world," said Andrew Chien, vice president, Corporate Technology Group, and director, Intel Research. "Working with these two prestigious universities will help catalyze the long-term breakthroughs that are needed to enable dramatic new applications for the mainstream user."

The research centers at the two universities will include roughly 100 faculty members, graduate students, and researchers. **I**

As dual- and multicore processors continue to enjoy their skyrocketing rise in popularity, Microsoft and Intel are funneling millions of dollars into research that will make the technology even more effective on both the software and hardware fronts.

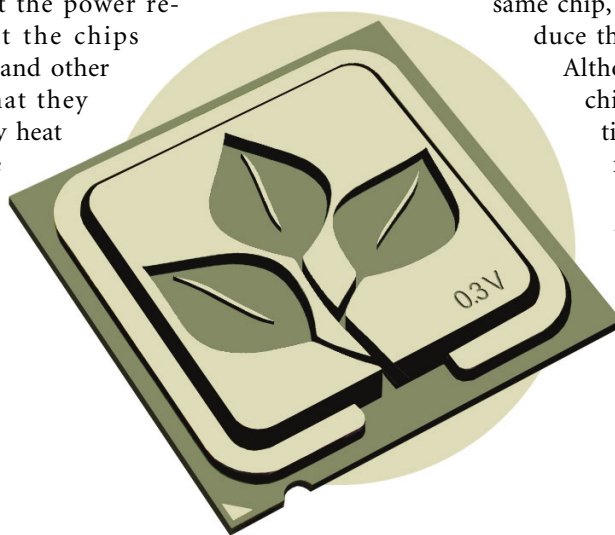
How Low Can The Voltage Go?

Being green is keen these days, and researchers at MIT and Texas Instruments might just be the keenest of all. Whereas most current chips operate at around 1 volt, these researchers have constructed a new chip design that operates at only 0.3 volts. This new design could help manufacturers create mobile devices that run far longer than current devices.

In fact, the team said that the power requirements are so low that the chips could be used in pacemakers and other implantable devices, and that they may be powered only by body heat or motion. Naturally, there were challenges inherent

in building the new design, because today's chips rely on higher voltage levels. "Memory and logic circuits have to be redesigned to operate at very low power supply voltages," says Anantha Chandrakasan, MIT professor of electrical engineering.

According to Chandrakasan, the chip design uses a high-efficiency DC-to-DC converter that's built on the same chip, helping to lower voltages and reduce the need for separate components. Although Chandrakasan indicated the chip could find commercial applications in five years—or sooner—it remains a proof-of-concept design. ■



PROBLEM-SOLVER: TROUBLESHOOTING THE NEWS

My new DVD drive takes far too long to burn DVDs.

If your new optical drive is at least the same speed as your previous drive but takes longer to burn discs, chances are good that you'll need to update the firmware on the drive to ensure it's running at optimum speeds. Some manufacturers offer firmware version checking tools that can help determine if you need to flash your drive's firmware.

My LCD (liquid-crystal display) monitor is constantly flickering. How can I fix it?

Unlike CRT (cathode-ray tube) monitors, which can use higher refresh rates to avoid flickering, most LCDs use a 60Hz (hertz) refresh rate and generally don't flicker naturally. Check that your monitor cable is firmly attached between your graphics card and the monitor and that moving the cable doesn't worsen the problem. If it does, try using a new cable.

How can I eliminate white streaks on my laser-printed pages?

When toner cartridges begin to get low, the powder distribution can become uneven and cause white

streaks on pages. Remove the cartridge from the printer and gently shake it to more evenly distribute the powder.

I recently built a new PC, but my CPU temperatures are unexplainably high.

If you're certain that the cooling is adequate for your CPU, the utility you're using to monitor temperatures might not be compatible with your hardware. In that case, try using an alternate temperature utility to see if your CPU temperatures appear to be different. ■

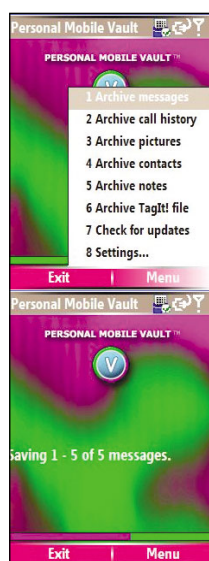
Storage For The Mobile-Minded

As wireless broadband technologies such as EDGE (Enhanced Data for GSM [Global System for Mobile] Evolution) and EVDO (Evolution Data Optimized) continue to proliferate, smartphone users are finding more ways to compute in the mobile world. They are also finding it easier to enjoy multimedia and other content while on the go. Although these devices include more storage than devices of the past, it's still far too easy to max out a device's storage, particularly when you are snapping plenty of pictures, downloading MP3s, and recording voice messages.

But there's a solution that not only helps to preserve that precious storage space but also delivers peace of mind. Increasingly, mobile storage sites are popping up, offering easy-to-access tools to offload files from smartphones and other devices onto quick-loading Web sites. These services vary in function and price, so let's take a look at some available services to see what's offered.

Personal Mobile Vault (\$2 per month; www.1800message.com). At just \$2 monthly for 2GB of storage, Personal Mobile Vault provides an affordable service for mobile storage. PM Vault backs up contacts, call history, SMS (Short Message Service) messages, voice notes, and pictures to a secure server. Using the service is simple: Click the PM Vault

icon from the Start menu and then simply click an option to archive one of the content types. After your phone connects to the site, the items will be uploaded—all items the first time you choose that content type



Finding enough storage on your smartphone can be a difficult endeavor when using high-speed connections, but mobile storage services, such as Personal Mobile Vault, can provide an outlet to off-load some of that storage-sapping content.

and only new items during subsequent uploads.

Cortado Connect (free; www.cortado.com). If you are a BlackBerry user, you'll appreciate Cortado Connect for Box.net, which delivers 1GB of free online storage for documents, pictures, and music files. First, you'll need to sign up for a free Box.net account and then download the Cortado client to your BlackBerry device. Once you have the client, you can then access your Box.net directory to manage your files.

IBackup ILite (prices vary; www.ibackup.com). If you already have an IBackup account that offers traditional data backup, you can use IBackup's ILite service to access that account with your BlackBerry, Pocket PC, or Treo device. This service lets you view files and folders, browse through the contents, and save them to your local device. You'll also be able to use your device to share this data with others.

Of course, it's a good idea to check with your ISP (Internet service provider) to see if it already offers any free online mobile storage. Also, if you're already using a traditional online data storage service, check to see if the provider offers mobile functionality so that you don't have to use a separate service for your mobile storage needs. ■

DULY QUOTED

“But the subjects who had seen Apple’s logo also came up with uses like ‘tying [the brick] around my roommate’s foot and throwing him in a deep pond.’”

—Duke Professor Gavan Fitzsimons describes the reactions of test subjects who were asked to look at Apple and IBM logos for 30 milliseconds and then describe as many uses for a brick as they could.

Source: *The Wall Street Journal*

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY KYLEE DICKEY

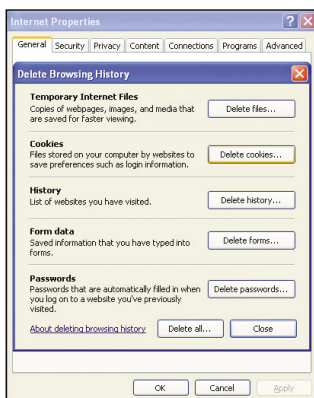
Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover three of the most common or timely tech support questions and provide our solution for each of them.

Q I would like to delete the cookies on my Windows XP system. How would I do this in Internet Explorer 6 or 7?

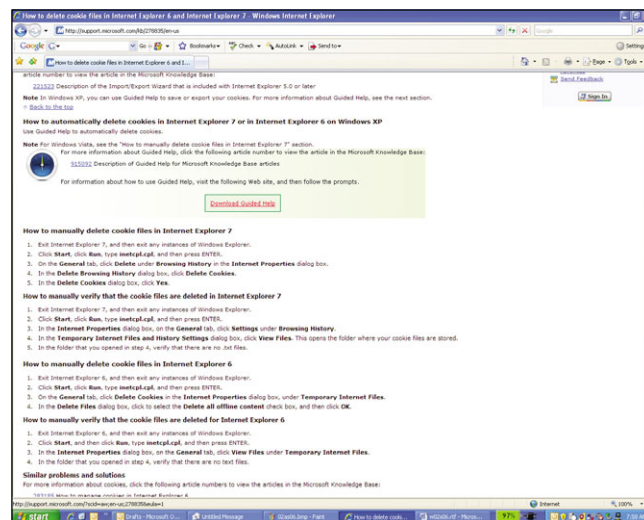
A Cookies are small files on your hard drive that act as markers. When you visit a certain Web site, it may look for a cookie that it stored on your system so that it can recognize you and automatically log you in to a Web site without prompting you to enter a password. Although cookies can be useful, some cookies can do much more than just act as a marker. Some cookies actually gather information about your browsing habits. For this reason, you may wish to remove cookies from your system after you are done browsing the Web.

There are two basic ways to remove cookies from your PC. The first is to use Microsoft's Guided Help, a program that you can download from Microsoft's Knowledgebase article about this topic. The second method is to manually remove the cookies.

Guided Help. To download Guided Help, go to support.microsoft.com and type KB278835 in the Search field and click Search. When the search results appear, click the How To Delete Cookie Files In Internet Explorer 6 And Internet Explorer 7 link. Then click the How To Automatically Delete Cookies In Internet Explorer 7 Or In Internet Explorer 6 On Windows XP link. Finally, click Download Guided Help in the green box on the screen.



You can manually remove cookies from Internet Explorer 7 in the Delete Browsing History dialog box.



On Microsoft's Knowledgebase article about removing cookies, you will find a link to download the Guided Help program.

Read the Terms And Conditions statement on the screen and click the I Accept button to continue. (If you do not accept the terms of use for Guided Help, you'll need to use the manual method of removing cookies, which we will cover after we discuss using Guided Help.)

After you click the I Accept button, your browser will download a small EXE (executable) file. When prompted, click Run to indicate that you want to run the file immediately rather than download it to your hard drive for later use.

When the Guided Help window opens, click the This Computer radio button and Next. Guided Help will then present you with two options: Do It Automatically and Show Me Step-By-Step. If you want Guided Help to delete the cookies for you while you watch, click Do It Automatically. If you want Guided Help to walk you through the process but let you delete the cookies yourself, click Show Me Step-By-Step.

Manual removal. If you want to delete the cookies from IE7 manually, make sure that IE7 is not running. Also close any open windows. Click the Start menu and Run. Type `inetcpl.cpl` in the Open field and press ENTER. In the resulting window, click the General tab. Then click the Delete button in the Browsing History section. A Delete Browsing History dialog box will appear. Click the Delete Cookies button. When the Delete Cookies dialog box appears, click Yes.

To delete cookies from IE6 manually, make sure that IE6 is not running and close any open windows. Then click the Start menu and Run. Type `inetcpl.cpl` in the Open field and press ENTER. Click the General tab and Delete Cookies. When the Delete Files dialog box appears, click to select the Delete All Offline Content checkbox. Click OK.

Q Is there a way to disable the spell check and grammar check in Microsoft Word?

A Yes, there is, but the procedure varies a little bit, depending on which version of Word you use. If you have Word 2007 installed, click the Microsoft Office button, which is the round button in the upper-left corner of the screen. Then click Word Options. Click Proofing and deselect the Check Spelling As You Type checkbox. Also click to remove the checkmark from the Mark Grammar Errors As You Type checkbox. Click OK.

If you use Word 2000/2002/2003, click the Tools menu and Options. In the resulting dialog box, click the Spelling & Grammar tab. Click to remove the check mark from the Check Spelling As You Type checkbox. Also click to remove the checkmark from the Check Grammar As You Type checkbox. Click OK.

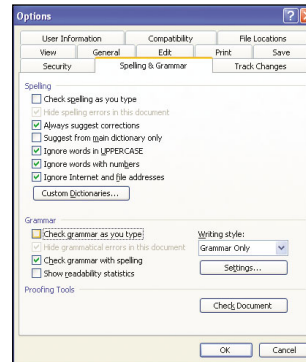
Q When I print photos on my photo or inkjet printer, I see small white gaps running through my photos. Why is this happening?

A This is one of the most common print-quality questions that we receive in our Tech Support Center. There are several things that might cause these white lines (known as banding) to appear in your photos. Most of the causes of banding are easy to fix, however.

Most often when you see banding in a photo, it is because you need to clean the print head. The exact method for doing so varies among printers, so you should consult your users manual to learn how to clean the print head on your printer. On most printers, you either press a button on the front of the printer or you use the printer utility (a small piece of software that came with your printer) to start the process.

If you continue to have problems with banding after cleaning the print head, verify that your printer is set to use the same type of paper that you have placed in its tray. To do this, click the File menu and Print. The options you see in the resulting window will vary, depending on what printer you have and the program from which you're printing. Look for a drop-down menu or other option that lets you select a paper type. If you can't find this on your own, you should be able to find assistance in your printer's users manual.

After you select the proper paper type, you might also want to adjust the print quality. Often, selecting a higher print quality will help to eliminate banding.



Microsoft Word provides an option to disable automatic spell checking and grammar checking.

Finally, make sure that your printer supports the type of paper that you are using. You can check the manual that came with your printer or the manufacturer's Web site to find information about the types and thicknesses of papers that are acceptable to use with your printer. Also consider the quality of paper you're using. Often budget-priced paper does not produce the same quality of prints as you can get with good-quality inkjet paper. It might be worth switching to a different brand or type of paper to see if you can get better results. ■

Feature Package Topics

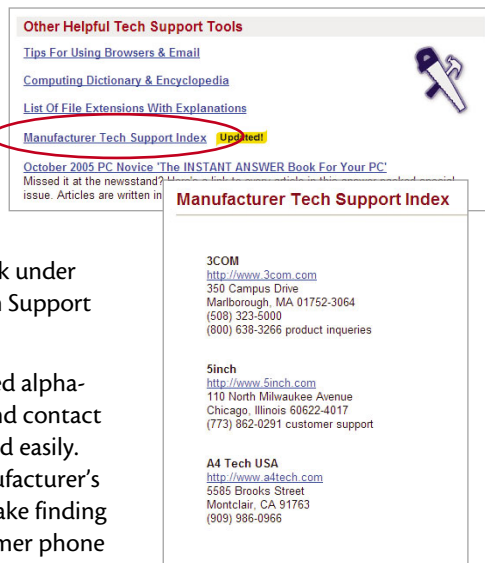
Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

June 2007:	Tweak & Troubleshoot Windows Vista
July 2007:	Clean It Out, Speed It Up!
August 2007:	Improve System Startup/Shutdown: Make Your PC Faster & More Stable
September 2007:	What To Do About PC Errors & Error Messages
October 2007:	Build It Yourself: How To Create The Perfect PC
November 2007:	How To Edit, Protect & Restore Critical PC Settings
December 2007:	Laptops Take Over Get It All: Power, Price & Portability
January 2008:	Time For A PC Tune-Up Improve Speed, Performance & Reliability
February 2008:	Get More Out Of Your PC Here's What You Can Do!
March 2008:	Solve Common PC Problems; Fix It Yourself Step-By-Step!
April 2008:	The Perfect Home Network: A Step-By-Step Guide
May 2008:	Protect Your PC & Your Privacy Block Intruders & Malware

Manufacturer Index

Technology can be a wonderful thing. But, what happens when your computer, router, or software goes on the fritz? How are you going to fix it? Better yet, *who* can you contact to fix it? When you need to contact a manufacturer for tech support but can't find its information, look no further! SmartComputing.com's Tech Support Center provides a list of manufacturers from D-Link and Netgear to Dell and Xerox.

1. Go to www.smartcomputing.com and click the Tech Support Center link.
2. Scroll down to the bottom of the page and click the Manufacturer Tech Support Index link under the Other Helpful Tech Support Tools section.
3. Manufacturers are listed alphabetically, so you can find contact information quickly and easily. We provide each manufacturer's Web site address to make finding answers simple. Customer phone numbers and company addresses are also listed.



Be sure to check out the hardware and software vendor contact information at the bottom of the page, as well. The links will connect you to Microsoft's vendor contact information lists. The lists are quite extensive and contain a wealth of information in one easy-to-navigate location.

The next time your router goes haywire or your software isn't working properly, check out the Manufacturer Tech Support Index, contact the manufacturer directly, and get the answers you're looking for today!

From *Smart Computing's* Dictionary

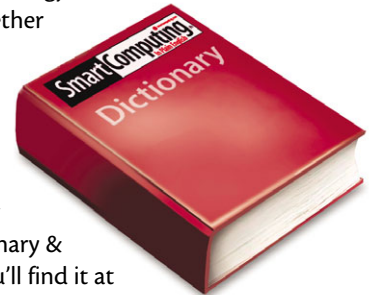
service pack

A collection of patches and utilities that are released as a sort of "super-patch" to keep Windows up-to-date. Many times, individual components of a service pack have already been released separately, but the complete service packs are officially supported by Microsoft.



Dictionary

Computing terminology can be confusing, whether you're new to the game or an old pro. Whenever you come across a puzzling term, consult the *Smart Computing Dictionary & Encyclopedia* (you'll find it at www.smartcomputing.com) for simple, straightforward explanations of technological terms.



Search Past Articles

Can't track down that keyboard shortcut you remember reading about a few months ago in *Smart Computing*? A simple search of past articles at www.smartcomputing.com will help you track down info in the vast resource of past *Smart Computing* issues. Click the Search All Articles link on our home page to get started.

Next Month

We know it's hard to wait for the next *Smart Computing* issue to arrive in your mailbox. Take a sneak peek at upcoming articles in the Next Month's Articles Online Now section of our home page.





CarMD Handheld Automotive Device & Software Kit • \$89.99 • www.carmd.com

Solve “Check Engine” Problems Like A Pro

CarMD Helps You Diagnose Car Trouble From Home Or On The Road

How many times have you seen the “Check Engine” light on your car’s dashboard and worried what it meant? Should you pull over? Call a tow truck? Drive straight to the mechanic? Maybe it’s just a loose gas cap. Thanks to the revolutionary CarMD handheld device, now virtually everyone who owns a vehicle can quickly and easily solve automotive repair mysteries—right from home.

How It Works

When your car’s “Check Engine” light appears, plug the CarMD handheld device into your vehicle’s Data Link Connector. (You can find the connector under the dashboard on all 1996 and newer vehicles.)

Within a few seconds, CarMD’s built-in LEDs let you know whether you can resume driving (Green = OK; yellow = possible problem; red = service required).

To learn more about your car’s problem, connect CarMD to your PC using the included software and USB cable. CarMD customers gain free access to an extensive online database (www.carmd.com) that helps diagnose the cause and estimate repair costs to help you save time and money and keep your mechanic honest.

Features & Benefits

- CarMD works on 1996 and newer OBD2 cars, light trucks, SUVs, and minivans—foreign and domestic.

- The CarMD handheld device helps buyers identify lemons at used car sales lots.
- Lifetime software updates keep your CarMD device up to speed on car trouble codes.
- CarMD includes toll-free access to ASE Certified Techs.
- Now includes a storage pouch!
- Plus, *Smart Computing* readers get \$10 off when you purchase online at www.CarMD.com using promo code: SmartJune.



A Couch Potato Is Born

Vegging Out & Taking Root

Marty Sems

Send your comments to
marty@smartcomputing.com



**LN-T5281F 52-inch LCD
HDTV**

\$4,999

Samsung
(800) 726-7864
www.samsung.com



BD-UP5000 Duo HD Player
\$999

O glorious sloth and indolence! With Samsung's help, I became completely worthless the past few weeks. You can, too!

Samsung LN-T5281F

Breathtaking. Ever since LCD HDTVs (high-definition TVs) first appeared, manufacturers have been trying to remedy their shortcomings. With the 81 Series, Samsung has nearly done so. And I say "nearly" only because there just has to be something I overlooked.

The big deal here is LED (light-emitting diode) backlighting. The light in most LCDs is actually a reflection from fluorescent lamps arrayed around the edges of the screen. The lamps are always on; the polarized filters in the screen block the light to make dark colors. Inevitably, light leaks through, so most LCDs' blacks look dark gray.

With the 81 Series LCDs, such as the 52-inch LN-T5281F I fell in love with (there are also 40-, 46-, and 57-inch models), Samsung eliminated the fluorescents and replaced the reflective rear surface with a panel of white LEDs. Each LED shines through a group of pixels on the 1080p screen, making colors and whites look brighter and broadening the palette of colors. The lighting is even across the entire screen, unlike a traditional LCD. And no matter where you sit in the room, the picture looks fantastic.

Like a plasma's pixels, each LED can turn completely off, so black areas look black. Hence, the 81 Series' 500,000:1 dynamic **contrast ratio** (the difference between its blacks and whites) is astronomical compared to most LCDs'.

Other high-end LCDs advertise special technologies, such as Sony's MotionFlow

and high 120Hz screen refresh rates, to make fast-moving objects on-screen seem to move more smoothly. Judder is a problem with most motion pictures, which were filmed at 24 frames per second. The 81 Series combats it with LED Motion Plus (not available in all picture modes). In all but a couple of films, spaceships, catapulted objects, and culinarily gifted rats moved fluidly without judder.

I found myself thrilled by sequences I'd seen a million times on smaller screens. From "The Lord of the Rings" to "The Empire Strikes Back," from "King Kong" to "Transformers," from "Saving Private Ryan" to "Starship Troopers," the Samsung blew me away. I'm a little embarrassed to resort to such hyperbole, but it's true.

Mind you, the 4.5- x 2.75-foot black monolith dwarfed my cozy living room. My auxiliary tester (the one I married) took to calling it "The Eye," and ever in a whisper.

Samsung BD-UP5000

Samsung's Duo HD Player can play both BD (Blu-ray Disc) and the late HD DVD, as well as DVDs. This player is phenomenal at all kinds of video, but its audio quirks make me hesitant to recommend it.

The irony is that with a DVD upconversion chip as good as the BD-UP5000's Silicon Optix Reon HQV, there's no need to buy BDs until they're the same price as DVDs. I could barely tell that BD and HD DVD were sharper than DVD, except during "Transformers." Even then, I had to really pay attention to actors' hair and minute details to discern any difference.

On the downside, the BD-UP5000's audio often cut out for a split second. Sometimes it turned staticky and distorted.

More disappointingly, the player can only play 2-channel sound from the Dolby TrueHD (and reportedly DTS-MA [Master Audio]) audio tracks found on most BD and HD DVD discs. However, a firmware update you can install (it should be available as you read this) will enable the player to "pass through" multichannel Dolby TrueHD to an audio receiver. Still, that means you'll need a receiver that decodes Dolby TrueHD and has an HDMI 1.3 input—these may not be cheap features—in order to hear surround sound on many BDs and HD DVDs. ■

A Crown Jewel

Archos 705 WiFi Serves Up The Bling

Blaine Flamig

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blaine@smartcomputing.com



705 WiFi

80GB, \$399.99; 160GB, \$499.99

Archos

(866) 489-4718

www.archos.com

Flashing a diamond ring is all good and well, but if it's too puny to see, what's the point? This seems to be the mindset Archos was in when it forged its mammoth 705 WiFi portable video player. If you like your mobile audio and video served up in supersized portions, open your eyes wide because you're about to be dazzled. Unfortunately, open your wallet, too, as this \$399.99 gem doesn't come cheap, especially after shelling out extra for accessories you'll actually want.

When you see how the 705 sparkles, though, you'll understand why.

Above all else, the 705 is gigantic (4.96 x 7.05 x 0.775 inches [HxWxD]) by mobile device standards. A 7-inch touchscreen display (800 x 480) lets you view movies, home videos, and photos. You can also watch TV

you record using a DVR (digital video recorder) function (complete with personal TV guide) that saves programming straight to the player. You also get a full-fledged digital audio player, two integrated speakers, and a palm-sized remote. Further, an integrated kickstand means you can set the 705 down, and the 3.5mm headphone jack doubles as a composite video out port to display images on a TV.

Need more bling for your money? No problem. The 705 also displays PDFs, plays Flash-based games, and has an excellent user interface and file browser to navigate content. Better, the 705's built-in Wi-Fi is actually useful, letting you stream audio and video from a networked computer; whip around the Web via a Flash-supporting Web browser; and download movies, TV, and audio from Archos' Content Portal. More bling? How about two built-in USB ports? I connected a digicam and moved photos and video to the 705's hard drive. And then

there's the 705's arguably most alluring trait: the scores of audio and video formats it supports, including MPEG (Moving Picture Experts Group)-4, AVI (Audio-Video Interleaved), WMV (Windows Media Video), DivX, H.264, MPEG-2, MP3, WMA (Windows Media Audio), protected WMA, WAV, AAC (Advanced Audio Coding), and AC3.

What's not to like? Well, the 705's size and heft (22 ounces) drastically reduce your mobile-use options. An included carrying case indicates that tucking the 705 in a pocket isn't happening. Operating the 705 is almost always a two-handed job. Worse, there's that issue of spending more money to fully utilize the 705's features. The DVR feature, for example, requires Archos' DVR Station Gen 5 dock (\$99.99). Browsing the Web requires an Opera Web browser plug-in (\$29.99). H.264 (for video podcasts) and MPEG-2 (for DVD-quality playback) support also requires separate plug-ins (\$19.99). Even displaying the 705's image on a TV requires a proprietary A/V (audio/video) cable (\$12.99).

Despite the additional cash and any numbness your arms may experience carrying this lug around, the 705 is still an undeniable multimedia juggernaut. The 80GB model stores 100 movies, 800,000 photos, or 45,000 songs, and the 160GB model doubles these amounts. The stellar format support meant there was little in my media library the 705 couldn't handle. And although the 705's performance isn't quite as massive as its other features, it's certainly above average. Most disappointing was the touchscreen's responsiveness (I preferred the stylus to my finger). The integrated speakers' output was also a bit flat, though a five-band equalizer and bass boost feature help matters. The 705's screen produces lively, accurate colors, but it wasn't as responsive or sharp as I'd hoped (the 800 x 480 resolution explains this somewhat). Web browsing, however, was quick and extremely satisfying from all hotspots I tapped into.

Ultimately, you could easily spend \$500 to utilize all the 705 WiFi's capabilities. Whether it's worth it depends almost entirely on how much you value hauling around dozens of movies you can watch on a screen that won't put your eyes into squint mode. Factor in the stellar Wi-Fi performance, and it's not difficult to reason why multimedia nuts will want to add this jewel to their collection. ■

A Tale Of Two Cameras

Double The Fun

Kathryn Dolan

Send your comments to
kathryn@smartcomputing.com



PowerShot SD890 IS

\$399.99

Canon

(800) 652-2666

www.usa.canon.com



Stylus 1010

\$299.99

Olympus

(888) 553-4448

www.olumpusamerica.com

The only thing better than having one high-functioning, point-and-shoot digital camera to test for a month was having two. I wanted a couple of cameras that slipped unobtrusively into my purse or pocket, and I wanted high megapixel counts and decent optical-zoom abilities so I could print some 8- x 10-inch and larger images.

Last month, I took hundreds of pictures with the Canon PowerShot SD890 IS (\$399.99; www.usa.canon.com) and the Olympus Stylus 1010 (\$299.99; www.olumpusamerica.com). They both set up easily right from the box, and the buttons and menus were uncomplicated. Despite having tested a few digital cameras, I'm no expert;

however, I didn't have to consult either manual at all. Both were user-friendly.

I took the cameras with me to Los Angeles to visit my sister (and explained to airport security why I had two cameras and two sets of chargers, batteries, and cables), and I hauled them around to a birthday party, a fundraiser, and a high-school golf tournament for a mix of indoor and outdoor images.

True Confessions

I started off with a bias, though. I'm a Canon loyalist. I love my G9, and neither camera was intended to replace the G9, which is a different class of camera altogether. This

month, I wanted to try out a couple of small, lightweight cameras that were easy to start up and use; had some high-end specifications, including at least a 5X optical zoom; and would take high-quality pictures.

I planned to give both cameras a fair shot, but I was a little afraid I'd prefer the Canon simply because it was a Canon. I needn't have worried. The Stylus 1010 performed remarkably well, had impressive

specifications, and cost \$100 less than the PowerShot SD890 IS. Although I liked both cameras, I'd have no trouble buying or recommending the Stylus 1010.

The cameras are superficially comparable: The 1010 weighs 4.8 ounces; the SD890 IS 5.47 ounces, and both are slim and pocket-portable. The 1010 has a 2.7-inch LCD, 10.1MP, and a 7X optical zoom, and the SD890 IS has a 2.5-inch LCD, 10MP, and a 5X optical zoom.

Lovely Images

The pictures were pleasing—especially given how easy the cameras were to use. In L.A., I took pictures of outdoor sculptures in bright sunlight and shade, and both cameras accurately captured details, even in shadows.

The birthday party in the sunroom was bright, with afternoon sunlight streaming in, and I took pictures of smiling faces that didn't look washed out or featureless. Both cameras have modes and scene settings to accommodate shooting in brightly lit areas, indoors or out.

The auditorium for the fundraiser was less-than-optimally lit, and I wasn't able to get close to the stage or the candidates. Although there were a few pictures that lacked enough contrast to print, most of them, with the help of the flash, were pretty clear. And because of the 7X optical zoom on the Stylus 1010, I was able to crop some extraneous detail and print pictures that clearly focused on several of the speakers' faces.

Unfortunately, the golf tournament was on a chilly, rainy day, so good photo opportunities were few and far between. The driving rain presents challenges beyond lighting for digital cameras because you don't want to get them wet. So, although the scene modes may have compensated for the overcast skies, I took pictures only in the club house in order to avoid drenching the cameras.

A Slight Edge

If I had been judging solely on ease of use and picture clarity, I'd have been hard pressed to choose a winner. Because of the excellent zoom capabilities of the Olympus Stylus 1010, I have to give it a slight edge over the Canon PowerShot SD890 IS. ■

Easy On The Eyes

NavDock Gives Your iPod A Bigger Screen

Joshua Gulick

Send your comments to
joshua@smartcomputing.com



Count me among the many who have succumbed to the iPod craze—I'm tossing in the towel as much because I like the cool accessories as because I like the portable media player. iPods (well, more likely, iPod sales) have inspired gadget makers to develop a ton of cases, cords, docks, FM receivers, and other handy extras. Among the coolest of these accessories is Tekkeon's NavDock, an iPod dock that lets you play iPod content on your TV. It's not perfect, but it's certainly worth a look.

Tekkeon's new iPod accessory includes a docking station that connects to your TV via composite A/V cables. The NavDock also includes a small remote control and a power cord.

That remote control is a key feature: Once you plug the iPod into the docking station, you can use the remote to navigate your iPod content (via bright, easy-to-read NavDock menus on your TV) from across the room.

Easy Setup

Setting up the NavDock was a snap. I plugged the NavDock into the wall outlet and then used the included component cables to connect the device to the TV. The docking station has a special seat for the iPod (the NavDock supports most iPod types), so I plugged a 30GB video iPod into the NavDock. Finally, I powered on my TV and pressed the Source button on my TV's remote to cycle among the TV's multiple A/V inputs until the NavDock menu appeared.

The NavDock's interface, which appears on the TV screen, is a little different than the iPod's interface, but it's just as easy to use. The NavDock's menus let you browse your iPod's content, including songs, TV shows, and movies. The remote has all the buttons I need to start and stop songs and movies. The on-screen interface displays album art for any song files that include album art, which is a neat feature—it looks great on the TV.

Photos are the only content for which the NavDock doesn't provide a menu on the TV. NavDock tells me that the iPod's photo-browsing software doesn't support on-screen viewing. I was able to use the NavDock to display my iPod's photos on my TV just fine, but I had to look directly at the iPod screen (instead of the TV screen) when navigating to the first photo in a slideshow. This isn't a NavDock issue—similar iPod docks from other companies behave this way, too.

Good Times For iPod Fans

Of course, the NavDock's slick menus and features wouldn't amount to much if it couldn't deliver quality audio and video to the TV. I compared the transfer capabilities of the NavDock to those of the Apple iPod AV Cable (\$19; store.apple.com). My wife (who signed on to the iPod craze much earlier than I did) regularly uses this cable to watch TV shows stored on her iPod. As with the NavDock, the cable displays audio and video on the TV via its composite A/V ports, but it doesn't include a remote control, which means you need to stand near the TV and fiddle with your iPod whenever you want to start, stop, or even just pause a song or video. I didn't notice any difference in quality after playing songs, TV shows, and movies via both the iPod AV Cable and the NavDock.

The NavDock offers full support for most iPods (including the iPod nano), but you should check the NavDock Compatibility information on Tekkeon's Web site to determine whether your iPod model will support all of the NavDock's features; some iPods, such as the iPhone and iPod touch, don't cooperate as much with the NavDock as standard iPod models do. ■

NavDock

\$129.95

Tekkeon

(714) 832-1266

(888) 787-5888

www.tekkeon.com

Digital Photo Frames

BUYING TIPS

Screen resolution is one of the most important features of a digital photo frame, as the primary goal of most digital photo frame buyers is to display and share photos. The display will have more clarity when there are more pixels in relation to its area.

Photos are meant to be shared, but all too often we leave our digital photo albums tucked away on our computer's hard drive. With a digital photo frame, however, you can dust those albums off and enjoy them with your family and friends.

Digital photo frames have evolved to let you do much more than just enjoy your favorite photo in digital form. For instance, you can view entire photo albums through slideshows, while also retaining the option to just show off one picture in particular. Many digital photo frames even let you enjoy audio and video files in addition to your photos. Models that boast wireless features allow you to connect to your home network, opening the possibilities of working with other devices such as your computer, photo printer, and more. In this article, we'll compare the various features of four popular digital photo frames.

Ceiva 8-inch Digital Photo Frame

Ceiva's 8-inch digital photo frame works closely with its Web-based accounts, giving users a plethora of options when they sign up for Ceiva's PicturePlans (\$99.95 for a one-year subscription, \$249.95 for a three-year subscription; www.ceiva.com/lmore/pp/pictureplan.jsp). Without a PicturePlan, however, you are limited to viewing photos on memory cards or those uploaded from the mini USB port. The Ceiva frame supports both wireless and broadband Internet access and has an extensive collection of channels that streams content other than photos to your frame. Broadband and wireless Internet access are only available with the broadband adapter (\$24.95) and wireless adapter (\$34.95).

PicturePlan gives you the ability to use Ceiva's Web-based program to

wirelessly receive photos, get daily photo updates on your frame, store digital photo albums, print pictures, edit images, display images, and share your pictures via wireless or broadband Internet connections. By signing up for a Ceiva channel, you can incorporate content streams into your slideshow that cover such topics as news, weather forecasts, sports, a daily calendar, horoscopes, and TV listings.

With a PicturePlan, your frame will search each day for new photos to upload from your computer. In order to send photos to your frame from your account, however, you must be logged into your account on your computer at the time you want to upload the photos. For instance, if you want your frame to check for new pictures every morning, you should leave your computer on and be logged into your account overnight. To manually update your frame, hold down the white wireless connection button on the back of the frame. Keep holding it until your frame tells you to let go. Anyone can upload photos to an account (as long as they have the username and password), so you can upload photos to your mother or grandmother's account to send to their photo frame.

Ceiva also offers printing services with the PicturePlan. Just select which photos you want printed and Ceiva will send them to you in the mail and bill you automatically.

In addition to the PicturePlan and Internet features, the Ceiva 8-inch digital photo frame also has a 640 x 480 resolution LCD, which isn't quite on par with the other frames in this article. The images, however, are still clear and bright. The brilliance of the Ceiva frame gives subjects—especially the skin tones of people—a little more of a glow or shine than the original image.

The Ceiva frame has no remote, so you must navigate with the menu buttons on the frame. Unlike the other frames in this article, the buttons are positioned on the front of the frame rather than the back. This makes the frame look more like a piece of technology than a home accent. But it's sleek, nonetheless. And if the black exterior won't blend into your home décor, a brown faceplate comes with the frame, as well.



Digital Spectrum MemoryFrame MF-8000 Premium

✓ Systems Supported

Windows Vista

Windows XP

Windows Me

Windows 98

Mac

Linux

Digital Spectrum MemoryFrame MF-8000 Premium

The Digital Spectrum MemoryFrame MF-8000 Premium steps connectivity up a notch by including support for Bluetooth, as well as 802.11b/g Wi-Fi. These technologies not only allow the MemoryFrame MF-8000 Premium to upload pictures wirelessly, but they also allow you to share photos between frames in your home. To use the Bluetooth technology, you will need to purchase a Bluetooth USB dongle.

With the Wi-Fi technology, you can upload photos from your My MemoryFrame (aol.memoryframe.com), Webshots (www.webshots.com), Flickr (www.flickr.com), and Windows Live Space (spaces.live.com) accounts. Each has a different configuration that involves entering your account information into the frame itself or through the software that comes with the MemoryFrame MF-8000 Premium. This software is more difficult to install than the Kodak software.



The Kodak software had an easy, step-by-step installation process that walked users through it automatically. With the MemoryFrame, users are left to the users manual (the instructions here are limited) and their own devices to configure the software. In fact, the MemoryFrame MF-8000 Premium is not nearly as user-friendly overall as the other digital frames.

With the MemoryFrame MF-8000 Premium, you get a whopping 256MB of internal memory, which is double what the other frames offer (the Ceiva frame doesn't operate on internal memory at all). It also has a higher resolution (800 x 600) than the Kodak EasyShare EX811, and the Ceiva. The images, however, looked washed out when we did a side-by-side comparison with

the other frames.

In addition to the support for JPEG (Joint Photographic Experts Group), PNG (Portable Network Graphics), BMP (bitmap), and GIF (Graphics Interchange Format) photo files, the MemoryFrame MF-8000 Premium supports MP3 and WMA audio files, along

Software Information

	Price	Company	Contact Information	URL	Notable Features
8-inch Digital Photo Frame	\$224.99	Ceiva	(877) 692-3482	www.ceiva.com	<ul style="list-style-type: none"> 802.11b/g wireless and broadband, with the appropriate adapters Channels for weather, sports, news, etc., with a Ceiva PicturePlan Automatic daily photo updates with a PicturePlan
MF-8000 Premium	\$279.99	Digital Spectrum	(949) 252-1111	www.dsicentral.com	<ul style="list-style-type: none"> 802.11b/g wireless and Bluetooth (with Bluetooth USB dongle) 256MB of internal memory Frame-to-frame sharing Support for audio files
EasyShare EX811	\$199.95	Kodak	(800) 235-6325	www.kodak.com	<ul style="list-style-type: none"> 802.11b/g wireless Works with PictBridge for printing Kodak color science technology Simple-to-use EasyShare and Kodak Gallery software 128MB of internal memory
DPF-0802	\$169.99	Westinghouse	(866) 287-5555	www.westinghouse.com	<ul style="list-style-type: none"> MosaicView Technology 800 x 600 resolution 128MB of internal memory Plug-and-play capabilities

with WMV video files. And along with the wireless and Bluetooth uploads, you can upload your photos directly from your PC, thumb drive, camera, or a variety of memory card formats including SD (Secure Digital), CF (CompactFlash), and MMC (Multi-MediaCard). The MemoryFrame MF-8000 Premium also includes a remote control.

The MemoryFrame MF-8000 Premium has the same 8-inch LCD as the other frames, but the frame itself is 10 x 11.75, which is larger than the other 8-inch frames. And not only is it bigger in size, it's a bit chunkier than the other frames. While the other frames are 1.5 inches thick, the MemoryFrame MF-8000 Premium is 2 inches thick. It does, however, have a removable faceplate so you can switch from the original black frame to a brown tone if that's a better fit for your home.

Kodak EasyShare EX811

✓ Systems Supported
 Windows Vista
 Windows XP
 Windows Me
 Windows 98
 Mac OS X 10.3 or higher
 Linux



Kodak EasyShare EX811

The 8-inch Kodak EasyShare EX811 is both affordable and easy to use. It uses the Web-based Kodak Gallery to store and transfer pictures to your frame, but it also comes with EasyShare software. Once installed, the EasyShare software will search your computer's hard drive for all photos, and then you can transfer those photos to the Web-based Kodak Gallery for sharing. If you store your photos with an on-

line Web site such as Picasa (picasaweb.google.com) or Flickr (www.flickr.com), you can transfer your images to the EasyShare desktop software in order to upload them to this frame. The EasyShare software is easy to use; has a simple, automatic installation process; and includes drag-and-drop features.

In addition to wireless uploads, the EasyShare EX811 features plug-and-play support for memory cards and cameras. You can upload photos into the 128MB of internal memory with memory cards, cameras, and the Kodak Gallery. When you connect your EasyShare EX811 to your home network, you can print from a PictBridge-enabled printer without having to connect to your computer. A handy remote control is also included.

The EasyShare EX811 features a high-resolution (800 x 480) LCD and a 300:1 contrast ratio. Kodak color science—a technology which enhances the brilliance of the color—allows the EasyShare EX811 to display a superior image of even lower-quality photos. The EasyShare EX811 supports JPEG and EXIF (Exchangeable Image File Format) photo files, along with MOV, AVI (Audio-Video Interleaved), MPEG (Moving Picture Experts Group)-1 and -4 video files, and MP3 audio files.

Kodak chose a 16:9 widescreen aspect ratio for its screen, which limits the type of images that can be displayed without having the bottom of your photos cut off.

Westinghouse DPF-0802

Simplicity is the key to the Westinghouse DPF-0802 digital photo frame. While it may not have all the bells and whistles the other frames have, the DPF-0802 excels at the features it does have. The DPF-0802 has plug-and-play capabilities, so you can just plug your memory card into the frame, turn it on, and enjoy the slideshow. It also has a USB 2.0 port, a mini USB port, and 128MB of internal memory.

The MosaicView is a technology developed by (and unique to) Westinghouse. It allows you to view up to four photos at once on the frame's high-resolution (800 x 600) LCD. This 8-inch screen boasts a 500:1 contrast ratio, providing you with an ex-

ceptionally crisp, clear, and bright image. And while it doesn't support any audio files, it does support JPEG, AVI Motion-JPEG, MPEG-1, and MPEG-4 photo and video files.



Sharing Your Moments

All of these digital photo frames are great ways to display your digital photo albums, but only you can decide what features appeal to you most. Getting to share your memories is the best part of digital photo albums, so don't hide them deep in your computer's hard drive anymore. ■

BY TESSA BRENNEMAN

BUYING TIPS

It may be hard to predict what kind of storage media you'll want to use to transfer images to your frame in the future. Look for a frame that supports a variety of types, such as USB, mini USB, and common memory card formats.

Check Out The Tech Support Center

The Tech Support Center at SmartComputing.com has always been the place to find helpful information for all of your computing troubles. Check out the Networking & Communications area to find out how to install and configure your home network properly. You'll find out how to set up your wireless network, fix wireless connection problems, and much more. Be sure to take a look at the Backups & Data Recovery section, as well. This area contains articles that explain the ins and outs of creating system backups, recovering lost data, and other backup basics. Check out these articles at SmartComputing.com's Tech Support Center today!

1. Go to SmartComputing.com and click the Tech Support Center link on the home page.
2. Click Backups & Data Recovery or Networking & Communications.
3. Click View ALL Backup & Data Recovery Articles or View ALL Networking & Communications Articles to view articles within those departments.

Be sure to store all of your articles and information in your Personal Library to keep for future reference. Simply log in and when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you like to keep your information organized and accessible.

Tech Support Center

- Error Messages
- Solutions Knowledgebase
- Basic Troubleshooting Articles
- Security & Privacy
- How To Get Rid Of
- Backups & Data Recovery**
- Preventive & Regular Maintenance
- Networking & Communications
- Articles On How To Install ... Just About Anything

Backups & Data Recovery

Every disk drive in existence will stop working one day; count on it. If a drive failure would be a major disaster in your life - or even just a terrible nuisance - move forward and backup.

Sample Articles:
[Backup Basics](#)
[Create System Backups](#)
[Data Recovery Basics](#)
[Create Emergency Root Disks](#)

[View ALL Backup & Data Recovery Articles](#)

Tech Support CENTER

Random

Summer is upon us, and to celebrate its long-awaited arrival, we did a search of some fun summer items at www.smartcomputing.com. "Ice cream" made 41 appearances, "vacation" showed up 653 times, and "sunshine" showed up about 19 times.



Tech Support

Though the outdoors may heat up this summer, you shouldn't. If computing problems are making you hot under the collar, visit the *Smart Computing* Tech Support Center. You'll find guides for everything from regular maintenance to reinstalling your operating system.

Top 25

Some questions come up over and over again. To find a list of the 25 most-frequently viewed Tech Support articles, click Top 25 on the Tech Support Center home page. At the time of this writing, the Startup menu, SATA drives, and mystery beeps topped the list of subjects.

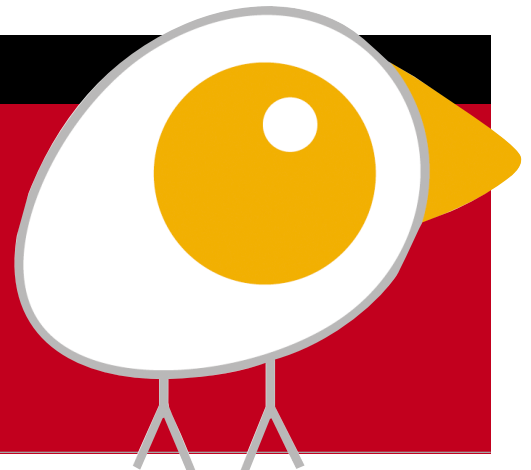


Smart Computing's Fun Site Of The Day (January 16, 2008)

Minor Details

If you are looking for fun, creative ideas to use with your wee ones, Minor Details (www.minordetails.typepad.com) has lots of imaginative suggestions. This blog touts itself as a children's interior consulting firm, centering on creating spaces that encourage imaginative play for the family. Jennifer Ward, creative director of Minor Details, focuses on architectural and structural concepts, as well as renovation, furnishing, color, and design.

www.minordetails.typepad.com



Software Reviews

\$79.95

Lasting Impressions
For Paper

(801) 298-1979

www.memorymixer.com

Key Benefits:

- Nice collection of ready-to-use templates, artwork, and other extras
- More graphics control than some competitors

Scrapbook With Ease

MemoryMixer

With digital scrapbooking programs and Web sites cluttering the landscape, it can be difficult to pick the one that fits your needs. MemoryMixer is a highly adaptable scrapbooking program flexible enough to suit just about everyone.

First Glance

MemoryMixer will tax users with older systems, but if you can get past the system requirements, it is quite useful. The installation consumes nearly 700MB of storage on your drive. Install the extras and the installation will be about 3GB. It also needs a reasonably powerful system to run. Recommended is a 1.6GHz Pentium 4 or better processor, and 1GB or more of memory, although it will run on less. Running on a system a bit faster than the recommendation, it seemed

or video to your album. Using the Edit Photo button, you can perform basic photo edits (crop, remove red eye, etc.) and more.

Here, you'll also apply special effects, a term MemoryMixer uses for artistic effects (sepia, impressionist painting, etc.), position changes (flip; mirror), and technical tweaks (gamma correction; brighten). MemoryMixer makes it easy to add or delete photos, resize or relocate them, and perform other adjustments. You can also adjust opacity to let the background show through a photo using a slider bar in the Edit Photo interface.

Easy Does It

At the outset, if you opt to use MemoryMixer's QuickMix feature instead of starting from scratch, you can create a complete photo scrapbook in minutes. With QuickMix, you select a ready-made album template, complete with backgrounds and artwork. Most templates offer several different page designs—the Custom Page Arrangement feature lets you mix and match them at will.

Once you've tweaked the album layout to your liking, MemoryMixer can place your images automatically or you can insert them manually. You can then edit art, backgrounds, and photos using the same tools available for From Scratch albums. When you're finished, a few clicks will let you check your album for spelling and errors (such as an item running off the page) and then publish it in a number of formats including a self-running digital album, printed Photobook (via MemoryMixer), movie, and more.

MemoryMixer includes more graphics-editing and production-control options than we expect from a scrapbooking program, which is a nice bonus. However, we wish it had a photo cataloging feature. If you have images stored all over your hard drive, photo selection will be a pain. Overall, MemoryMixer is a versatile and feature-packed scrapbooking program, especially for those who are long on photos and short on time. ■

BY JENNIFER FARWELL



a little bit (but not unreasonably) sluggish.

After installation (easy but requires a restart), MemoryMixer will lead you to its site for registration. You can also join the MemoryMixer family. Joining is not required but will give you access to more creative freebies.

Unleash Your Creativity

When you open MemoryMixer, two sequential interfaces pop up, prompting you to start or open an album (or visit the Web site) and then to build from scratch or use QuickMix (ready-made templates).

Choose to create a new album from scratch and MemoryMixer will prompt you to name your album and select the orientation (portrait, landscape, or square) and one of dozens of layouts (the arrangement of photos on the page). You can also start with a blank page.

Once you have the basics down, buttons on the left side of the display let you add photo frames, embellishments, titles, shapes, music,

✓ Systems Supported
Windows Vista
Windows XP/2000
Windows Me
Windows 98
Mac
Linux

Software Reviews

129.99

Corel

(888) 267-3548

www.corel.com

Key Benefits:

- Very good support for newer standard and high-definition video formats, as well as Blu-ray drives
- Ability to pause processor-intensive operations frees your PC for other tasks

✓ Systems Supported

Windows Vista

Windows XP

Windows Me

Windows 98

Mac

Linux

\$79.99 (\$49.99 Home version)

Acronis

(781) 222-0920

www.acronis.com

Key Benefits:

- Powerful and fast backup and recovery tools to create and restore hard drive images and files
- Supports network backup and restore

✓ Systems Supported

Windows Vista

Windows XP/2000

Windows Me

Windows 98

Mac

Linux

Efficient Editing

Ulead VideoStudio 11.5 Plus

Video technology is accelerating so quickly that it's hard to keep up, and not all video editors play nice with—or even support—all video formats. One program that offers broad compatibility and a wealth of functionality is Ulead Video Studio 11.5 Plus.

This update of VideoStudio Plus makes the program more powerful than ever. Features include the ability to import AVCHD (Advanced Video Codec High Definition), write HD video to a camcorder, burn HD or Blu-ray discs, upload to YouTube, import to or save files from mobile devices, and more.

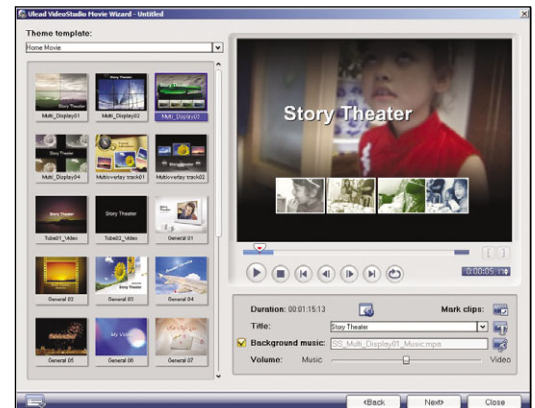
VideoStudio 11.5 Plus is a full-featured editor, so mastering its function set will take time. Two automated features, the Movie Wizard and the DV-to-DVD Wizard, are very user-friendly. The Movie Wizard has templates with background music that let you make a slideshow or movie in minutes. The DV-to-DVD Wizard converts and burns your DV (digital video) files straight to DVD.

The main program interface includes editing tools such as color correction and artifact

removal. The MPEG Optimizer can help determine the best encoding settings.

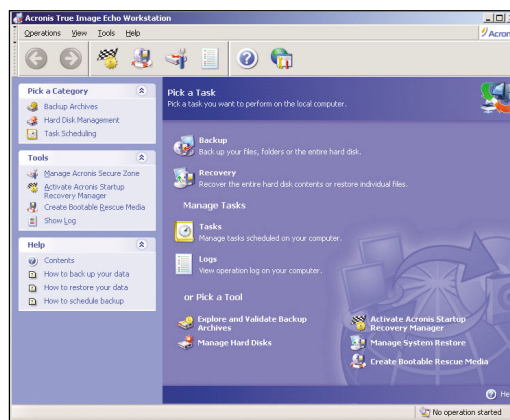
VideoStudio 11.5 Plus has stout system requirements. If your PC isn't up to the task or you don't require the high-tech perks, VideoStudio 11 (\$89.99) is another option (try either free). If you have VideoStudio 11 Plus, you can upgrade to 11.5 free. **||**

BY JENNIFER FARWELL



Network Backup

True Image 11 Echo Workstation



Backing up data and system files is a fundamental protective measure, but it's also easy to put off. Thus, we look for backup programs that make it easy to back up.

Acronis True Image fills the bill with two solutions—True Image 11 Echo Workstation and True Image 11 Home—for different needs. We evaluated Echo Workstation because it supports management, creation, and

restoration of backups over your network, a great feature if you have a networked, multi-PC home. As a drive-imaging program, True Image can create a complete drive backup—Windows, programs, and data—and save it to a variety of media.

True Image also lets you create different backup sets and schedules for data, music, photo files, and more. True Image can adjust settings such as level of compression and verify your backups periodically (backups are worthless if they don't work). True Image can also mount a drive image as a virtual disk you can access, clone (copy) your entire system to a newly installed drive.

If you don't have a network, consider Home edition. It's more user friendly than Echo Workstation. It includes many of Echo Workstation's features plus a file shredder, system cleanup, and more. **||**

BY JENNIFER FARWELL

Windows XP: Customize Explorer Windows

Many Windows XP users fire up Internet Explorer when they need to find and access information on the Internet. But when it comes to navigating the contents of your own computer, it's Windows Explorer that's called upon.

Many different aspects of an Explorer window can be customized. Let's take a look at a few ways they can be tweaked to be more useful.

Remove Or Replace The Task Pane

In the left-hand column of an Explorer window usually sits the Task Pane, which provides a convenient jumping off point for various Windows features and locations, as well as details on currently selected items. The Task Pane can be quite handy, but it also leaves less space available to display the contents of crowded folders. While you can't shrink the Task Pane, you can disable it. Just click Tools and Folder Options and from the General tab's Tasks area, select Use Windows Classic Folders, and click OK.

Another option is to take advantage of an Explorer Bar, which can appear in place of the Task Pane and can save you the trouble of having to open extra windows to get to certain Windows features. When you click View and hover over Explorer Bars, you'll find four of them to choose from. The Search Explorer Bar (keyboard shortcut: CTRL-E) will bring up WinXP's built-in search feature as if you had launched it from the Start menu. The Favorites and History Explorer Bars (keyboard shortcuts CTRL-I and CTRL-H, respectively), will give you a convenient way to use, add to, or organize your collection of favorite browser or system shortcuts, as well as review and sort a list of sites and links you've recently visited. Finally, the Folders Explorer Bar (alas, no keyboard shortcut for this one) will display a hierarchical view of your entire system on the left and the contents of the selected item on the right. You'll also see the Folder Explorer Bar if you launch Windows Explorer from the Start Menu's Accessories group.

You can use Explorer Bars whether or not you have the Task Pane visible. You can only use one Explorer Bar at a time, and they're not persistent. So if you close a window while an Explorer Bar is open, it won't be there the next time you open that or any other window.

Activate The Status Bar

If you can do without the Task Pane but still want to see how many files or folders you've selected (normally displayed in the Details box of the Task Pane), there's a way to have your cake and eat it, too. It's called the Status Bar, and to turn it on, click View and Status Bar.

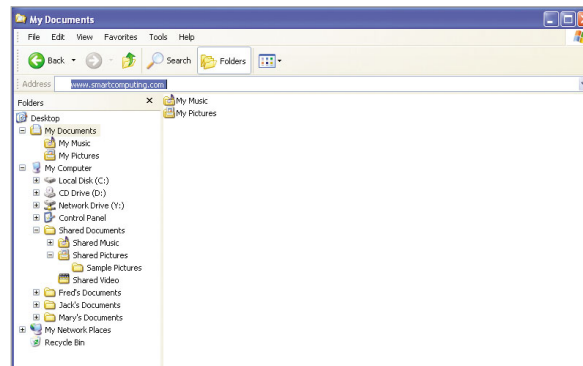
The Status Bar takes the form of a thin strip at the bottom of an Explorer window. Its left side displays the total number of objects in the folder you're looking at, so it will report 10 objects if the location you're looking at contains 10 folders or, say, six files and four folders. (If there are also hidden files or folders, and you've chosen not to have those displayed, they'll be tallied separately and shown in parentheses.) Whenever you highlight any files or folders, the Status Bar will change to display the number of selected items rather than the total number.

Toward the right side of the Status Bar, you'll see the total amount of disk space used by all the files within the current folder. This amount shown only includes space used by files, however, not other folders within a folder. As described earlier, when you highlight one or more files, this display will change to reflect the size of selected files only.

The Status Bar is a **persistent change**, so once enabled, it will appear on all your Explorer windows.

Take Full Advantage Of The Address Bar

Another handy feature of an Explorer window is the Address bar. If you don't see the Address bar in your Explorer windows, you can activate it by selecting View, Toolbars, and then Address Bar—a check next to



If you type a Web address into an Explorer window's Address bar, the site will open in a separate browser window.

it will indicate that it's turned on. (This is also a persistent change.)

The Address Bar always displays the path to the folder you're currently looking at (such as C:\DOCUMENTS AND SETTINGS\JOE\MY DOCUMENTS), and from there you can type in the location of any folder (say, C:\PROGRAM FILES) and the Explorer window will display its contents.

But as the word "Address" in the name suggests, the Address bar can also be used to access things like Web sites that aren't actually on your computer. For example, if you type **www.smartcomputing.com** into the address bar and press Enter, a separate Web browser window will open and load the site, while your Explorer window remains on whatever you originally had it open to. (Just as it does when you're typing an address directly into the browser, the Auto-Complete feature will offer you options based on things you've typed in previously.)

Here's another way to save yourself some typing when entering most Web site addresses: You can type **smartcomputing** and hold down the CTRL key as you press ENTER, which will automatically fill in "www" and ".com" for you.

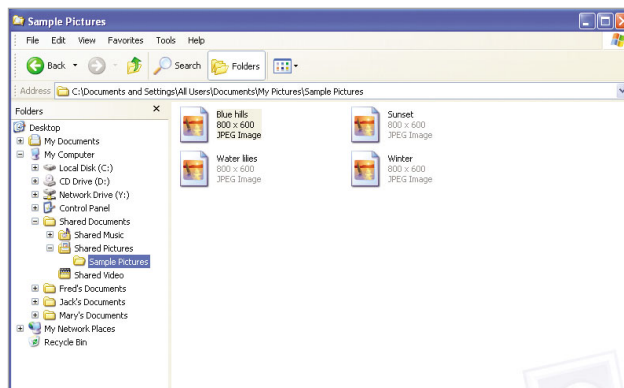
Create Your Own Button Bar

Every Explorer window includes a row of buttons that, in the default configuration, offers a handful of frequently used navigation controls like Forward, Back, and Up, as well as an alternate way to access various menu options. But you can make the standard toolbar even handier by customizing it to provide easy access to the specific options that you use most often.

To customize the Toolbar, right-click an empty area of it and select **Customize**. On the left side of the window under the **Available Toolbar Buttons** heading, you'll see a list of over a dozen items to choose from, including Cut, Copy, Paste, and Delete. (Another of the available "buttons" is the Separator, which is the thin line that can divide groups of buttons.)

Add new buttons to your toolbar by selecting items one at a time from the left column and then clicking the Add

button, which will move them into the **Current Toolbar Buttons** column and cause them to immediately appear on the toolbar. When you've added all the buttons you want, you can organize them by highlighting them one at a time within the **Current Toolbar Buttons** list and then clicking either the **Move Up** or **Move Down** buttons to arrange them to your liking.



When you replace the Task Pane with the Folders Explorer bar, you can easily navigate through your computer's folder structure within a single window.

Below the list of available toolbar buttons, you'll also find a couple of ways to customize button appearance and labeling. The default labeling option under **Text Options** is **Selective Text On Right**, which means that only certain buttons (whose icons may not necessarily have an obvious meaning) get labels. The other choices are to label all buttons or none of them. (Remember that you can always find the function of an unlabeled button by leaving the mouse cursor on it for about a half

second.) In the **Icon Options** drop-down menu, you can opt for small icons in lieu of the default large ones, which can be helpful if you've filled your toolbar with buttons and find yourself running low on space.

Unlock & Rearrange Your Toolbars

The standard toolbar orientation of an Explorer window starts with the menus on top, the Button toolbar under it, and then the Address bar beneath that, a layout that's locked down by default. To rearrange it, right-click an empty area of the toolbar and remove the check next to **Lock The Toolbars**.

Now, you'll be able to move any of the three sections by placing the mouse over the dotted vertical line that appears beside it on the left margin, and then clicking to drag it to a new spot within the window. The process can be a little tricky, however, so it may take some trial and error to get things just the way you want them. Once you do, be sure to relock the toolbar so you don't accidentally mess up your new layout with an errant mouse movement. (Any changes you make to the contents or orientation of your Explorer toolbars are persistent.)

As you can see, with a bit of Explorer window tweaking, you can make managing files on your system a lot more convenient. ■

33 objects (plus 3 hidden) 0 bytes My Computer

When you turn on Explorer's Status Bar, it will tell you how many total or selected items are in the current folder.

BY JOSEPH MORAN

Windows XP: Outlook Express Stationery

Outlook Express provides a variety of default stationery designs ranging from simple backdrops with splashes of color to seasonal themes featuring distinct headers. The stationery function allows you to create, customize, and edit backgrounds to include in your emails. You'll find about 15 default stationery options to apply to your outgoing messages. In addition, there are innumerable sites on the Web where you can preview, access, and download hundreds of unique stationery templates. Learn how to personalize your Outlook stationery any way you like, so your digital mail reflects your style the same way paper stationery can.

Create & Edit New Stationery

To select default stationery for your outgoing Outlook Express 6 emails, begin by clicking the Tools menu on the Inbox toolbar and selecting Options. Next, choose the Compose tab. Here you'll see the Stationery area; make sure that Mail is checked in this area. Click Create New to open the Stationery Setup Wizard. This is where you will customize your background picture, position, and color, as well as set the font and margins. Click Next to create your new background.

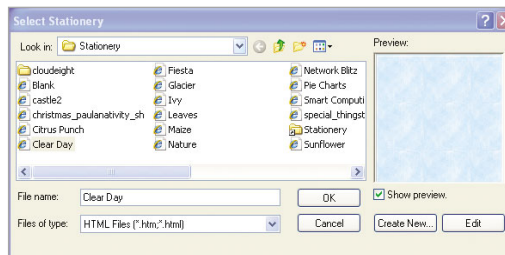
Choose a particular stationery template by clicking the drop-down menu under the Picture checkbox. At this point, you can position your stationery vertically and horizontally using the selections in the Positions drop-down menus. You can also choose to tile the stationery design, replicating it multiple times vertically, horizontally, or across the entire page. Pick from a rainbow of colors listed in the Color drop-down menu (you may have to checkmark the Color box to access the drop-down menu) to fill the rest of your message and then click Next. Decide on the style, size, and color for the font in this stationery. Click Next and you'll see options for setting margins; you can adjust the margins by clicking the Up and Down arrows in the Left Margin and Top Margin boxes. Click Next and then fill in the Name box and select Finish to complete your creation.

Use Stationery In Your Messages

Now that you've successfully designed your own stationery, you must apply it to your outgoing messages for your recipients to see what you've made. After making new

stationery, you should return to the Compose tab where you first began the stationery creation process. First, click the Select button; it will open the Select Stationery window. Find the name of your recently created stationery, select it, and click OK. Now you will see this name in the Mail box. Click Apply and then OK to exit the Options window. It's a good idea to test if you've actually applied the new template to your outgoing messages. To do this, click Create Mail; you should see the same design that you observed in the preview window.

If you prefer to add stationery to an individual message, select the Message menu and move your cursor over New Message Using to view a list of up to 10 recently accessed stationeries. Your customized template may be shown here; otherwise, you will need to click Select Stationery to find the correct file. Maybe you've already started composing a message and you decide to add stationery to your current message. In your new email, click the Format menu and



In the Select Stationery window, you can create customized templates, edit existing ones, and apply them to your outgoing messages.

point to Apply Stationery. Choose one of the recently used stationeries or click More Stationery for more options.

Install Online Stationery

Although Outlook does provide templates with various patterns and colors, there are unlimited options on the Web you can use to personalize your outgoing messages. If you're searching for free stationery, you'll need to sift through quite a few sites for one that offers safe downloads, free of spyware and adware. The Cloudeight Stationery Library (www.thundercloud.net) is one such site with family-safe downloads and a large compilation of over 4,000 selections. Each collection, featuring the art of a specific artist or series, includes eight or more stationery designs. Templates from Cloudeight include audio, an image, and a Web page with scripting. When you download stationery from the site, these files will appear separately in your default stationery folder.

To navigate Cloudeight Stationery, first browse through the Library to find a collection that piques your interest. For instance, begin by clicking Reflections; a new window will open and the entire Reflections Collection should be available to you. Scroll to the middle of the Web page and select Download Reflections Collection, Standard Install. Next, a File Download window will open and ask you if you want to Run, Save, or Cancel; click Run. Your security software automatically verifies this download. An Internet Explorer Security Warning window will appear and ask you if you want to run the file; select Run. Next, you'll be prompted to extract files to a specific location in your computer. Follow the prompts to continue downloading. The default location for your new stationery is C:\PROGRAM FILES\COMMON FILES\MICROSOFT SHARED\STATIONERY; you can find all of your Cloudeight stationery downloads here if you ever want to delete them. Click Start and you'll see that a certain number of files have been extracted—this is normal. Finally, click OK.

Once you've completed the online stationery downloads, you can apply new templates to your outgoing messages. To do this, you should follow the steps outlined in the "Use Stationery In Your Messages" section. In the Select Stationery window, you should recognize the name of your stationery download as either a file or a labeled folder. Some stationery from Cloudeight may be in its own folder along with subfolders named for the different collections available on the site. Click your desired template and then select OK. At this point, you should test your outgoing messages to see if the stationery appears correctly in another Inbox. Send your mail with the appropriate stationery to a standard email address. If you have a second email account, you can send the message to yourself or send it to a



Thundercloud.net offers numerous creative backgrounds that feature audio.

friend who also has Outlook Express, so you're able to verify what you sent.

Remove Stationery Files

Maybe you think it's time to wipe the slate clean and return to the simple, white email message. Removing stationery from a single outgoing message involves a few familiar steps. In your message window, select **Format**, drag the pointer to **Apply Stationery**, and hover over it until you see a list of stationery options. To clear your current stationery, click **No Stationery**. Your outgoing message should now appear completely white.

To uninstall the stationery from Cloudeight, you will need to access your default stationery directory. Begin by

clicking the Start button and then click My Computer. Next, choose the C: drive section. Then go to Program Files and continue to Common Files. Select the Microsoft Shared folder; here, you'll find your on-line collection. Delete all three parts of the stationery you wish to eliminate (HTML [Hypertext Markup Language] document, JPEG [Joint Photographic Experts Group] image, and MIDI [Musical Instrument Digital Interface] file). If you attempt to delete Cloudeight stationery through your outgoing message window, only the HTML file will be removed. ■

BY JOANNA SAFFORD

Personalize Emails

Windows Vista: User Accounts

At first blush, having multiple user accounts on a single computer can seem superfluous. After all, each account would have access to many of the same programs, files, and folders. Plus, if you have the password for the Administrator user account, you can do everything that the administrator can do anyway.

However, there are a number of uses for different user accounts. For example, if there are multiple people in a household working on the same computer, each user can have his own personalized account. Appearance, settings, preferences, and even the files on the Desktop can vary from user to user.

Having multiple user accounts won't hamper convenience, either. You can stay logged on when you switch to another user, which is nice because you don't have to restart every time someone else wants to log on. (In Windows XP, this was an option you could turn on called Fast User Switching, but it's standard in Windows Vista.) Plus, access to Standard and Administrative accounts can be protected by a password, so staying logged on isn't a privacy risk.

In Vista, you can set up and manage user accounts from the User Accounts And Family Safety section of the Control Panel.

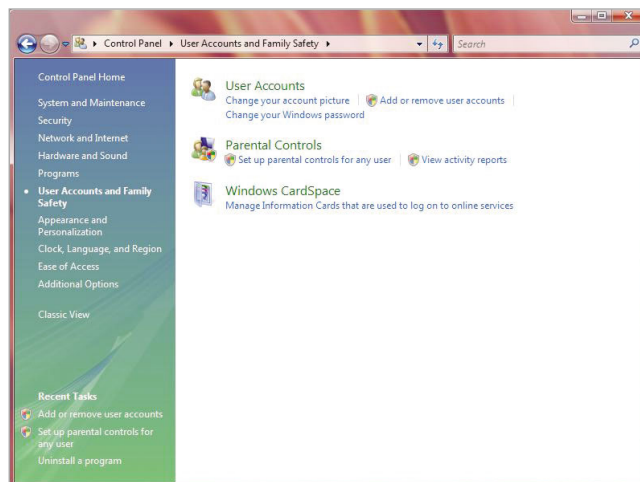
User Accounts: Personal & Secure

There are three types of user accounts: Administrator, Standard, and Guest.

An **Administrator account** has the authority to make any number of changes on the computer, including installing hardware and software, changing security settings, and accessing and modifying all files.

Standard accounts have less authority to make changes to the computer that would affect other users. From a Standard user account, you can't install hardware or software, for example. In WinXP, this was called a **Limited account**. Still, a Standard account gives you the capabilities you'll likely need for daily computing. Plus, if you have the administrator's password—the one required to log in to the Administrator account—then you can still conduct administrative tasks while using a Standard account. For example, if you try to install software from a Standard account, you will be prompted for the Administrator password before you can proceed.

You can have multiple Standard accounts. To create a new one, click Start, Control Panel, and Add Or Remove User Accounts under User Accounts And Family Safety. If



From the User Accounts And Family Safety area in the Control Panel, you can set up and manage user accounts, as well as Parental Controls.

prompted, click Continue. Under the panel displaying current accounts, click Create A New Account. Type the name of the account (your choice) into the text field, select Standard User, and click Create Account.

If you have a friend or visitor who would like to use your computer, they can use a **Guest account**. Guest accounts are for people who need temporary access to your computer. Like a Standard account, you can't install or uninstall anything from a Guest account. Additionally, a Standard account is designed for one user to customize, and it's a place to create and store their own files, whereas a Guest account is intended for any number of people that may use the computer.

This facilitates greater security for your computer. For one thing, you (as the administrator) must enable Guest accounts before one can be created. You can also disable the function if you want to restrict access to your computer. Guest accounts allow you to share your computer with someone without granting them access to important settings.

To enable your Guest account, click Start, Control Panel, and Add Or Remove User Accounts under User Accounts And Family Safety. If prompted, click Continue. Click Guest and Turn On.

Administrative vs. Nonadministrative User Accounts

Even if you are the administrator for your computer, you should create a Standard account for yourself that you use on a regular basis instead of the Administrator account. This prevents you (or another user) from making changes that affect other users.

UAC (user accounts control) is designed to alert you if you're about to do something that only an administrator should do. In the Administrator account, you will simply be

prompted to click Continue if you want to finish the action you started; in the Standard account, you will actually be asked for a password. This may help guard against malware, as a password prompt can prevent Administrative tasks from being carried out inadvertently or without careful consideration.

Though it may seem inconvenient to use an account that doesn't have administrator privileges, it really isn't; from a Standard account, you can do just about anything an administrator can do. The password you use to log in to the Administrator account can be used by any Standard user who knows it to conduct administrative tasks.

How To Use User Accounts & Family Safety

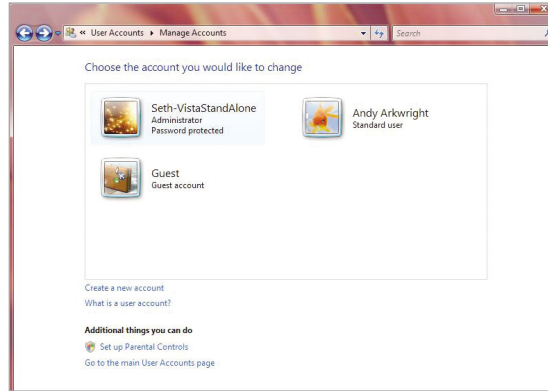
The world of computers is as wide open and fascinating—as well as potentially dangerous—as the world itself, especially to children. With Parental Controls, a feature in Vista that enables more control over configurations than similar tools in WinXP, you can add protections for your child's user account so that she has age-appropriate access to the Internet and applications on the family computer. You can also set limits for the hours your child can access the computer.

Though Parental Controls can only be applied by an Administrator account to a Standard account, the settings and parameters are customizable for each user account. For example, as much as you want your 5-year-old to become computer proficient, you don't want her to be able to poke around folders that contain important system files. Or, as your child starts exploring the Internet, you want to be sure he doesn't accidentally wander onto salacious Web sites. Each child requires different Parental Control settings.

You can set Parental Controls by clicking Set Up Parental Controls For Any User under User Accounts And Family Safety in the Control Panel. (First, be sure you are logged on as Administrator and the account you're adjusting is logged off.) If prompted, click Continue. Click the account for which you wish to set Parental Controls.

Select the On, Enforce Current Settings radio button. If you want to receive reports about this user's computer usage, including Web sites visited, select the On, Collect Information About Computer Usage radio button.

Click Windows Vista Web Filter to adjust Internet access. You can choose



There are three types of user accounts, each with different levels of access to the computer: Administrator, Standard, and Guest.

to block some Web sites and content; to allow only specific Web sites (such as a school Web site or online encyclopedia); automatic

Web restrictions (High, Medium, None, or Custom); and whether or not to block file downloads.

Click Time Limits back in the User Controls window to set the hours during which your child can access the computer. Click and drag the mouse pointer over the days and hours you want to block and click OK.

You can set parameters for games, too. Click Games, select Yes or No under Can (username) Play Games. If you choose Yes, click Set Game Ratings to set some limitations. Most games will have a rating from EC (Early Childhood) to AO (Adults Only); select the radio button next to the highest rating you will allow your child to play and click OK. Back on the Game Controls screen, click Block Or Allow Specific Games to further customize your child's experience.

Finally, click Allow And Block Specific Programs in the User Controls window if you want to keep your child from certain applications, such as money management programs. Select the appropriate radio button and select the applications from the list to which you'd like your child to have access. Leave unchecked any programs to which you don't want your child to have access. ■

BY SETH COLANER

Windows CardSpace

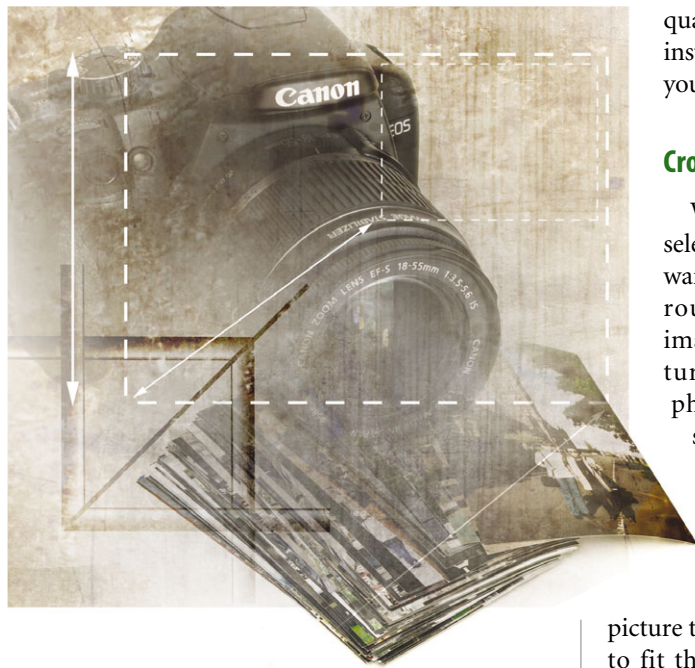
Microsoft is developing Windows CardSpace as a way to supplant the need for using passwords online. At the same time, CardSpace is designed to be more secure than the usual username and password combination. It's a digital ID, and you can make one in Windows Vista by clicking Windows CardSpace in the User Accounts And Family Safety area of the Control Panel.

When you open Windows CardSpace, you'll be greeted by a screen where you can create a card by clicking Add Card and then Add. You have the option of creating a Personal Card, which lets you log in to Web sites quickly without needing a password, or installing a Managed Card, which is issued to you by a business or organization. (You may be able to contact your bank, credit card company, or other organization such as your employer to get a Managed Card.) Click Create A Personal Card, enter your information, and select a picture to go on it.

When you have completed your card, you will be directed to a Web site where you can activate your new digital ID. The next time you visit a Web site that allows you to log in with a card, you'll be able to do so simply by clicking the Windows CardSpace option. ■

Optimize The Size Of Your Photos

Tips For Resizing Digital Images



quality and provide step-by-step instructions to reduce the size of your images.

Crop

When you crop a photo, you select an area of the picture you want to keep and cut out the surrounding portions. Nearly all image-editing applications feature a tool for cropping your photos to precut photo paper sizes. It's a good idea to crop your photos before you print or send the images to an online print service, because the printer may cut out portions of the

picture that don't fit or scale the image to fit the aspect ratio of the chosen photo size. Therefore, you'll be taking a chance that your prints will be cropped in a way that poorly reflects the original image. Cropping is also useful when you want to improve the framing of a shot; for example, to eliminate distracting elements in the picture.

If you know the photo size you plan to use, some digital cameras let you change the capture settings to match a standard print size. See the "Camera Settings" sidebar to find out more about configuring your digital camera to

capture images ideal for printing right away.

Resize

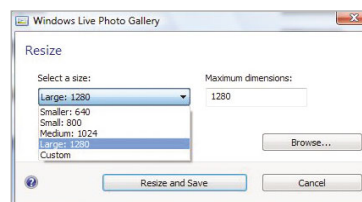
When you email images to friends, you'll often want to reduce the pixel dimensions of your photos, which also decreases the file size, to prevent an image-filled email from overloading your friend's email account. This will also diminish the time it takes for your friend to download the pictures. Additionally, smaller dimensions allow the recipients to open the photos at full size without requiring them to scroll vertically and horizontally—or zoom out—to see the entire picture. To shrink both the physical size and file size of your pictures, most photo-editing applications offer a resize tool that lets you adjust the number of pixels in a photo.

To see how much space we could save by reducing the pixel dimensions of our images, we shrank a 2.31MB image with pixel dimensions of 2,576 x 1,932 down to 1,024 x 768. The file size dropped to 173KB—effectively taking up 1/14 of the storage space of the original—and because our monitor resolution was set to 1,280 x 1,024, we could see the entire picture without

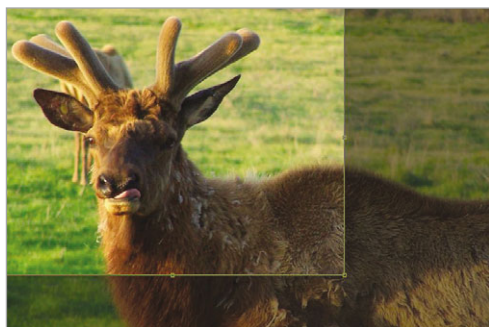
needing to scroll or zoom out. In terms of image quality on your monitor, recipients shouldn't notice too much of a drop in quality as long as you keep the number of pixels above 600 x 480. We should note that the lower the pixel count, the smaller the prints

your recipients will be able to create from your pictures. If you think your friends will want to make prints larger than 4 x 6 from the photos, consider sending several emails with a few photos apiece, rather than one email

Most newer digital cameras capture images that are 6MP (megapixels) or greater, which is enough picture data to let you create 8 x 10 prints without losing the detail in your pictures. But when you're emailing a batch of photos to a friend, the high-resolution images may be slow to transfer and even too large for your email service to send. If you plan to make prints of a photo, you'll also want to crop the image to fit a standard photo size, because the differences in aspect ratio among 4 x 6, 5 x 7, and 8 x 10 photos can drastically alter the composition of your pictures. Fortunately, most image-editing programs allow you to resize the image to a smaller proportion. We'll explain how the different resizing tools affect photo



The Select A Size drop-down menu in Windows Live Photo Gallery lets you resize the number of pixels in your image to match up with common monitor resolutions.



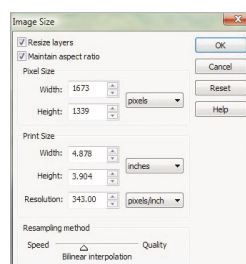
When you crop a photo, the selected area is the portion of the picture you wish to keep.

Fix menu. Choose Crop Photo from the list of tools on the right. If you wish to edit the image to match a specific photo size, click the Proportion drop-down menu and select the corresponding photo size. If you don't want to be limited by the aspect ratio, choose the Custom option. Next, click and drag the handles on the selected area to cover the portion of the photo you wish to keep. If you click inside the cropped area, you can also move the crop box up, down, left, or right. Once you're happy with the selection, click the Apply button.

Windows Live Photo Gallery also offers a quick way for you to resize photos. Right-click the photo you wish to alter and select

Resize. In the Select A Size drop-down menu, you can choose from Large: 1280, Medium: 1024, Small: 800, Smaller: 640, and Custom. The number represents the amount of pixels the tool will use for the longest side of your photo. If you select Custom, you can manually enter the number of pixels long your image will be in the Maximum Dimensions field, but Windows Live Photo Gallery cannot increase a photo beyond its original dimensions. Additionally, the image-editing application maintains the aspect ratio of your photo.

Note that the four preset options match up with common pixel widths for monitor resolutions, so your images will appear full-sized (or close to full-sized) if you select an option that corresponds to your screen resolution. To resize the file, click the Resize And Save button. Windows Live Photo Gallery will automatically save the resized image as a separate file, so you won't ever save over your original photo. You can also resize a batch of files simultaneously. To do so, select a group of images, right-click, choose Resize, select a size, and click Resize And Save.



Some applications, such as Serif PhotoPlus X2, offer a number of ways for you to resize your photos.

that contains all the photos you wish to send.

Time To Resize

Basic image-editing software is often included with your digital camera, but if yours didn't come with software or you're looking for an easy-to-use application, consider downloading Microsoft's Windows Live Photo Gallery (free; get.live.com/photogallery/overview). In addition to editing your photos, the Windows Live Photo Gallery also lets you organize your photos and send the images to your online Windows Live Spaces account or your Flickr account.

To crop a photo, double-click the image you want to edit and select the

Camera Settings

Many digital cameras let you adjust the **aspect ratio** (the relation of an image's width to its height) of your photos, as well as the number of megapixels used to capture the image through the camera's settings. Adjustable capture settings are handy if you want to take pictures that are ready for email or to print as soon as you transfer the files to your PC. Smaller file sizes are ideal when you want to send the photos over email, so it's best to set

your camera to use the lowest megapixel rating available. Most megapixel ratings also list an aspect ratio, such as 4:3, 3:2, or 16:9, so choose the option that best suits the photo size you'll be printing.

Although every camera has different menu settings, most offer similar types of adjustments, and in our example, we'll be using a Kodak M753 (\$119.95; www.kodak.com). Turn on the Kodak M753 and press the Menu button. Press the Up and Down arrow buttons on the camera until you highlight the Picture Size setting. Select the OK

button on the camera. At the Picture Size window, the M753 lists 7.0MP (4:3), 6.2MP (3:2), 5.3MP (16:9), 5.0MP (4:3), 3.1MP (4:3), 2.2MP (3:2), 2.1MP (16:9), and 1.2MP (4:3).

If you want to email the pictures as soon as you download the images from your digital camera, select the 1.2MP option to conserve space. The 3:2 aspect ratio options are perfect for printing 4 x 6 photos right away. Note that each aspect ratio is offered at a few megapixel options, so choose a setting that best matches your needs. ■

More Options

If you want even more control over the size of your photos, you can invest in a more advanced image-editing program, such as Adobe Photoshop Elements 6 (\$99.99; www.adobe.com), Corel Paint Shop Pro Photo X2 (\$79.99; www.corel.com), or Serif PhotoPlus X2 (\$79.99; www.serif.com). Whichever application you choose, use the image-editing techniques we covered to optimize your digital photos for specific purposes. ■

BY NATHAN LAKE

Choose A Camcorder

Storage Matters

As camcorders have become more advanced—and digital camcorders have taken over analog models in the market—consumers' array of choices has never been greater. While you are considering such issues as display size, lighting, and color quality, don't overlook storage media. Current-generation camcorders can use one or more types of storage, and the options you select can directly affect your enjoyment of the device.



History Lesson

Internal hard drives and removable flash media slots have become commonplace options for video storage, but a few years ago, that wasn't the case. Prior to about 2005, internal hard drives and removable flash media slots were nonexistent in consumer camcorders, with manufacturers relying heavily on DVD or MiniDV tape.

The tables have turned, and DVD and MiniDV tape are becoming less prevalent, although some camcorders offer a combination of storage options that includes DVD, hard drive storage, and flash drive storage. (The term DVD is actually a bit of a misnomer, as consumer models generally use Mini [3-inch] DVDs for storage.) At the January Consumer Electronics Show, seven of the Innovation 2008 Award Honorees in the Digital Imaging category were camcorders. None supported MiniDV tape, and only two used DVD.

The drop in popularity doesn't mean you shouldn't consider these media types, but it does indicate some

caution is in order. The key to a happy union between you and your camcorder is finding the most suitable—and flexible—storage option for you.

DVD (Mini DVD)

Recording Format: DVD-only models generally use MPEG (Moving Picture Experts Group)-2.

Storage Capacity: 1.4GB (single-sided, single-layer) or 2.6GB (single-sided, dual-

layer), which equates to 20 or 40 minutes of best-quality video.

Pros: Inexpensive media; can go straight to most DVD players; random searchable access of footage. DVD-only models are now in the lower price tiers.

Cons: Recording format is not preferred choice for top quality. The format is not natively supported by many video burner/editor programs and doesn't edit well. DVDs must be formatted before use.

Special Considerations: Pricier DVD camcorders generally produce better quality than bargain-priced models.

Using rewriteable Mini DVDs, these camcorders can record, erase, and re-record footage, with some offering rudimentary on-device editing. They can also finalize the session (generally required before you can play them).

Transferring video to your PC, assuming your DVD drive reads the media, is a simple matter of dragging files from the Mini DVD to the desired location on your PC. However, to create a full-sized DVD from Mini DVD footage, you'll need to rip it to your PC and then burn it to DVD.

However, many video players, burners, and editors (including

Windows Media Player) do not natively support MPEG-2, so you must decode and re-encode them for processing. Furthermore, MPEG-2 uses specialized compression techniques that reduce quality and complicate editing.

Mini DVDs come in one or more formats—Mini DVD-R (DVD-recordable), Mini DVD-RW (DVD-rewriteable), Mini DVD+RW (DVD plus rewriteable), and Mini DVD-RAM. Match the model you select to the capabilities of your DVD player to avoid ripping and reburning your footage.

MiniDV Tape

Recording Format: DV (digital video)

Storage Capacity: 60 or 90 minutes at best-quality (DV)

Pros: Good quality at low cost; broad software support.

Cons: May soon be obsolete in consumer devices; some lack native compatibility with PCs, TVs, or players. Tape must be rewound or fast-forwarded for access.

Special Considerations: MiniDV camcorders marketed as HDV (high-definition video) use MPEG-2 to capture the higher resolutions of HD (high definition). Quality is better than Mini DVD, but MPEG-2 brings some editing hassles. However, more programs support HDV than standard MPEG-2.

MiniDV camcorders use miniature cassette tapes for storage. Transfer to a PC may require a MiniDV cassette deck, but most camcorders can transfer via a direct FireWire cable connection. Transfer occurs via video playback, a slow and tedious process.

DV's quality and compression methods make it a top pick for editing; most video editors handle DV files beautifully. To create a full-sized DVD, you'll capture the edited footage in a suitable format (AVI [Audio-Video Interleaved] is common) and then encode it as MPEG-2. Fortunately, many video editors support both DV editing and DVD authoring. Increasingly, you will find consumer-grade MiniDV

camcorders at PC clearance sites, as manufacturers retreat from DV in favor of newer digital formats.

Internal Hard Drives

Recording Format: Depends on camcorder; some record to MPEG-2, but increasingly, HDD camcorders offer HD capabilities and use either HDV or newer, better HD formats.

Storage Capacity: Varies based on drive size, compression format, and quality settings.

Pros: Large capacities eliminate the need for removable media. Data transfer to PC is faster than any other format. Cameras often sport internal editing capabilities, and random access and search is a snap.

Cons: HDD-only camcorders require PC access or erasure if a drive fills up. Some HD HDD footage may be natively compatible only with Blu-ray and HDTVs.

Hard drives—both traditional magnetic hard drives and flash drives—are hot components in the latest generation of camcorders. You'll find them in a variety of price points, as well, from under \$500 to \$1,500 or more. Weight was a concern in early units, but newer models are surprisingly light. An HDD camcorder Sony debuted at CES (the Sony HDR-SR12, \$1,399.99; www.sony.com) sports a 120GB HDD yet weighs just 1.38 pounds. Drives this large remove concerns about running out of space during, say, a weekend vacation.

Transferring footage to your PC is fast and easy. A USB or FireWire connection will make the link, and you can drag and drop from there. Ease of editing and burning to DVD depends on the file format. Standard MPEG-2 comes with the problems mentioned earlier. HDV is better, even though it uses MPEG-2 compression, because it captures more information initially and more programs support it. New HD formats that utilize the MPEG-4 AVC (Advanced Video Coding) codec fare better in editing sessions but require recent-release video editors.



Newer, better flash-based camcorders support HD quality. The Panasonic HDC-SD5 (\$999.95; www.panasonic.com) supports up to 8GB via SD/SDHC memory cards and can burn direct from them to a PC's DVD player.



The Sony DCR-DVD810 (\$479.99; www.sony.com) is a versatile camcorder with an 8GB internal flash drive, a Mini DVD recorder, and memory stick slots.

Removable Flash Drives

Recording Format: Low-priced models use efficient, but low-quality, standard MPEG-4; better models support MPEG-2 or MPEG-4 AVC.

Storage Capacity: Varies by model. A camcorder could have as little as 16MB of built-in memory, but many have 8GB. You can also expand the memory of most flash-based camcorders with memory cards. Video recording time varies based on compression format and quality settings.

Pros: Removable cards and sticks are very durable and make quick work of data transfer to PCs, printers, and TVs with compatible slots. Random access and search is easy.

Cons: Limited drive size curtails storage possibilities without purchasing multiple cards.

For the past few years, many low-end camcorders have offered removable flash memory as the only storage option. However, many current models include it as part of a hybrid solution, paired with a DVD recorder or hard drive. Others, including HD models, support new, larger flash cards.

Data transfer with a removable card is simple, assuming you have a card reader or your PC offers slots. However, MPEG-4 suffers even more during the recording process, making editing for top quality a real nightmare. For down-and-dirty recording, MPEG-4 recorders are fine. For video you'll edit, stick with a better format.

It's A Wrap

As you may have surmised, MiniDV tape camcorders offer the best quality among SD models, but they are less convenient to use. Many consumers opt for lower-quality video rather than deal with the hassles of tape.

If you are not interested in video editing, an MPEG-2 HDD or MPEG-4 flash-based camcorder may provide all the quality and flexibility you'll need. If you're undecided or love the idea of recording to Mini DVD, one of the available hybrids may fill the bill. The newly released Sony DCR-DVD810 (\$479.99) is as versatile as they come, sporting an 8GB flash drive, memory stick slots, and a Mini DVD recorder.

If you make the leap to HD, you'll enjoy better quality. HD formats utilize technologies that squeeze the most out of MPEG-2 and MPEG-4 compression schemes. You can also burn HD video straight to a Blu-ray Disc—and two new models from Hitachi (www.hitachi.us) incorporate Blu-ray recorders. Just make sure your camcorder also offers SD recording for older-device compatibility. When editing time arrives, recent releases such as Pinnacle Studio 11 (\$49.99; www.pinnaclesys.com) support or can convert all current formats. ■

BY JENNIFER FARWELL

Many of our readers come across fast, easy ways to solve a problem or accomplish a task. Well, we'd like to hear about it! If you have a great tip you'd like to share, please email us at readertips@smartcomputing.com. If we print your tip, we'll send you a free *Smart Computing* T-shirt. You'll be the envy of all (well, some) of your friends.

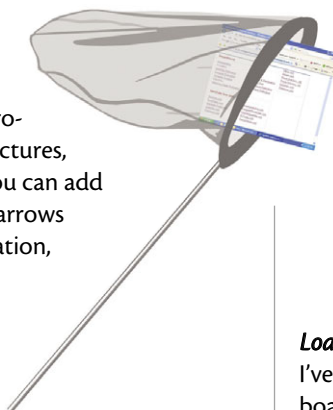
Please include your first name, last name, and address so that we can give you credit if we print your tip. (And so that we can send your T-shirt to you, of course.) Please limit your tip to 200 words or fewer. Not all tips received will be printed, and tips may be edited for length and clarity.

Finding An Easier Way To Do Things

Screen Capture Made Easy

Many articles have mentioned how to capture and print Web pages using the PRINT SCREEN key. I found a really nifty program called FastStone Capture (www.faststone.org). This is a very small shareware program, free of advertising, which allows you to capture a whole page or only parts of a Web page. After selecting a print area, a window pops up showing the selected area. You can then print it without pasting the content into Notepad or other word processing program. It works for text, pictures, tables, etc. In addition, you can add text to the cropped site, arrows pointing to a specific location, etc. I use it constantly.

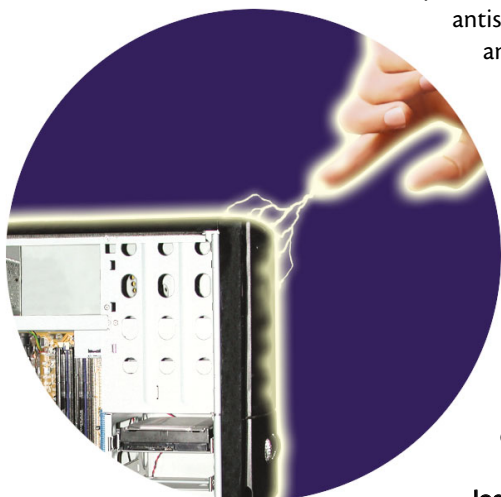
Wolfgang K.,
Laguna Woods, Calif.



Don't Shock Your Computer

If you are like me, you just love opening your computer's case and doing something on the inside. But when you're doing this, you have to be careful. Sometimes I open the case just to clean out the fans, and sometimes I need to replace a hard drive. Whatever the reason, when I open the case, I always put on an antistatic wristband. Using an antistatic wristband is one way to protect your computer from static electricity. If you don't use caution while working inside the case, you can easily fry components or any other part with just a little static shock. I've learned this from experience, and trust me, I don't want to do it again.

Joey J., Bruce Township, Mich.



Know Your Ink Cartridges

Whenever I change my ink cartridges, I take the cartridge's label and tape it to the wall above my printer. Then, any user can view what brand and color it is and the date it was changed (I fill the date in myself). If a problem arises in printing, the need for cartridges can be ruled out if applicable. It has saved me time and money.

Ruth H., Lower Sackville, Nova Scotia



Load That Clipboard

I've always been frustrated by the Windows Clipboard caching only one item. You end up using a long string of CTRL-C and CTRL-V key combinations if you're trying to cut and paste paragraphs from several different places into one document. There are software packages available that allow multiple caching onto the Clipboard, but I forget how to use these programs if I don't need them for a few weeks.



Clipomatic, a freebie from www.mlin.net, solves that problem because it does things in a familiar way. Copy multiple items to your heart's content using CTRL-C. When it's time to paste, put your cursor where you'd like to add the text and use the CTRL-ALT-V key combination to bring up the list of cached items. From the resulting pop-up menu, you use the mouse to click the selection you want added.

Chris W., Santa Fe, N.M.

DIY Project: Use A KVM Switch

Two Computers, One Set Of Peripherals

Personal computers have been a fixture in our households for so long and have become so affordable over the years that they tend to accumulate. So what do you do with that old machine after the new one arrives? Give it to the kids? Donate it to charity? Use it as a doorstop?

Why not continue to use it alongside the new machine? You can use the new computer for work-related projects, for example, while reserving the old computer for personal use. Or the new computer can be all yours, while the kids use the old PC at the same desk when you aren't busy (and have time to supervise them).

Most people don't consider these options because two computers take up way too much space. You can tuck both PC towers beside the desk, but then you need a separate monitor, keyboard, and mouse for both, correct? Or even if your monitor has more than one video input, you'll still need separate input devices, right? Wrong.

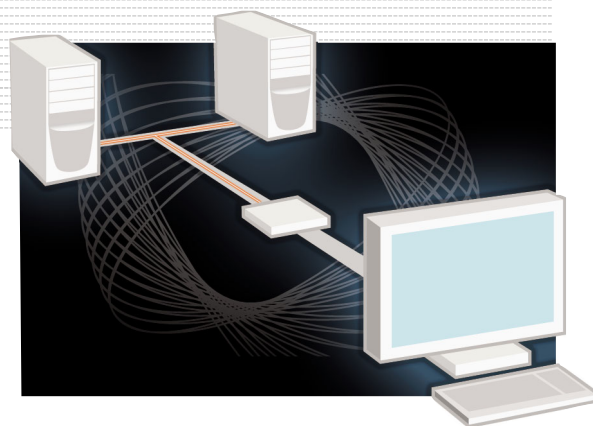
KVM (keyboard, video, mouse) switches let you easily share one set of peripherals between two (or more) different PCs, providing the best of both worlds. You simply connect both PCs to the switch's input ports, connect your hardware to the switch's

output ports, and then use a software- or hardware-based switch (depending on the type of KVM hardware) to select which computer gets access to the shared display and input hardware.

Which Switch?

KVM switches are usually so easy to install and use that the biggest problem is choosing one that works best with your existing hardware. The leading companies that make this hardware, such as Iogear (www.iogear.com) and Trendnet (www.trendnet.com), offer switches in dozens of configurations to accommodate various hardware mixes, so you really need to know a lot about your video card, monitor, mouse, and keyboard to select the right one. Most KVM switches work independently of the operating system and other software you use, so you shouldn't have to worry if you are sharing peripherals between, for example, a Windows Vista PC and a Mac.

All switches have a certain mix of input and output ports. Outputs from the back of the PC must match the inputs on the switch, while outputs from the switch must match the ends of the



cables used by your mouse and keyboard, as well as the type of input you plan to use on the monitor.

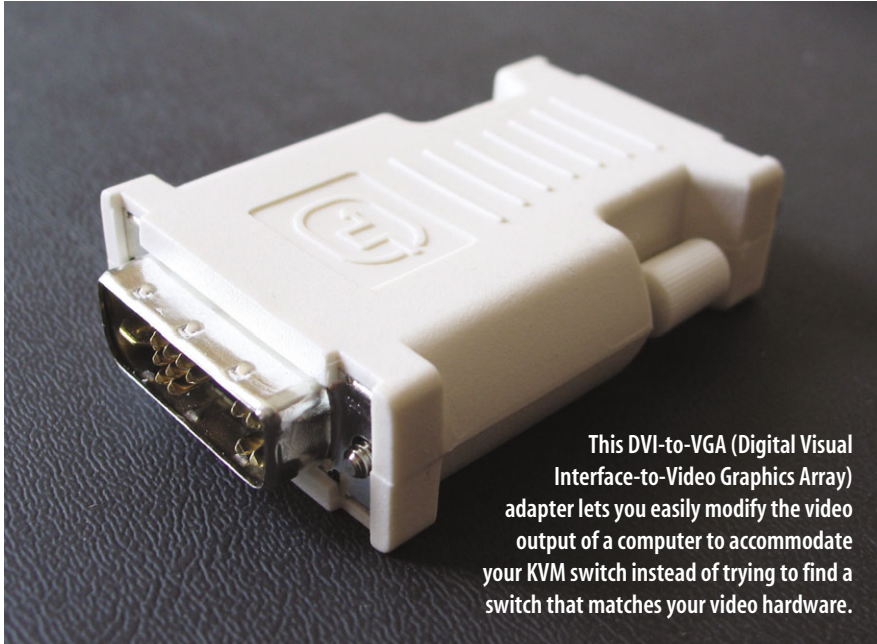
Here's an example. Pretend you have an old PC with an old video card equipped with a VGA (Video Graphics Array) output port and PS/2 mouse and keyboard input ports. You also have a new PC with a modern video card that has a DVI (Digital Visual Interface) video output port and uses USB ports for the keyboard and mouse.

You can try to find a switch that has one input that accepts VGA and PS/2 connections and a second input that accepts DVI and USB connections, but you're better off purchasing one that has two inputs that accept DVI-D and USB connections and then purchasing adapters for the older hardware. In this case, you'd need a VGA-to-DVI adapter for the video card and PS/2-to-USB adapters for the mouse and keyboard. Most hardware devices come with these adapters, so you may already have them lying around. Adapting the PC to work with the KVM switch instead of buying a switch that fits your exact needs will let you keep using the switch in the future if you buy yet another new PC and want to use it alongside the DVI/USB-equipped PC you already own.

There are many other features to consider beyond simple KVM support. Some switches—such as the one we tested—let you share USB peripherals,



Read the labels on the back of the KVM (keyboard, video, mouse) switch carefully because it is easy to confuse inputs and outputs if they all look the same.



This DVI-to-VGA (Digital Visual Interface-to-Video Graphics Array) adapter lets you easily modify the video output of a computer to accommodate your KVM switch instead of trying to find a switch that matches your video hardware.

for instance, a USB printer between the two connected PCs and one set of speakers that both computers can access. More advanced (and more expensive) models may come with their own audio hardware that both PCs share.

Check the USB specifications carefully, as there are two main versions in use. USB 1.1 is much slower than USB 2.0, so if you have a USB 2.0 peripheral and want to share it via the KVM switch, make sure the switch supports that standard. Our switch, for example, only supported USB 1.1, so we couldn't use it with our fast USB 2.0 external hard drive. USB 1.1 is more than enough to accommodate any mouse or keyboard, so there's no need to check if you only plan to share those two devices.

Finally, check the video modes supported by the switch to make sure it will work well with your video card and monitor. To check the screen resolution settings you currently use, in Vista, right-click the Desktop and click Personalize and Display Settings (in WinXP, click Properties and select the Settings tab). To check the refresh rate in Vista, click the Advanced Settings button (Advanced in WinXP), and then select the Monitor tab. Check the Resolution entry (1,280 x 1,024, for

example) and the refresh rate (60 Hertz, for example), and then check the specifications for the KVM switch to make sure its video output can achieve that resolution and refresh rate. The values listed in the specifications are maximums, so the switch will work with your hardware as long as the numbers there are equal to or greater than the ones you use.

Check The Cables

When purchasing a switch, make sure it comes with all of the cables you need to connect each PC to each of the switch's input ports. Our test model came with two high-quality cables,

incorporating a DVI cable, USB cable, speaker cable, and microphone cable. You'll also need to keep one of the monitor cables you already have to connect the monitor to the KVM switch. Your mouse and keyboard attach directly to the switch so you won't need any extra cables for those (although you may need an adapter if the switch uses ports that differ from those of your mouse or keyboard).

Install A KVM Switch

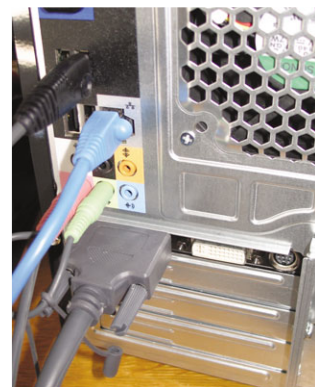
Adding a KVM switch to your computer setup is trivial compared to picking one out. The following advice assumes you have a two-input, single-output switch that uses DVI-D for video and USB for the keyboard, mouse, and other peripherals, but many of these tips apply no matter what particular switch you use.

The switch we tested is an Iogear MiniView GCS1762 2-Port DVI KVM & Peripheral Sharing Switch With Audio (\$249.95; www.iogear.com). That's a mouthful, but it means the switch supports input from two computers that have DVI video output and stereo audio output. As mentioned, it lets two PCs share USB 1.1 peripherals along with one pair of powered computer speakers.

Step 1: Connect the computers. Make sure both computers are turned off. Remove the video cable from the back of the PC where it is connected, and if your switch came with audio



This is what our switch looked like when everything was connected properly. Note the USB drive, which can be accessed by both computers thanks to this switch's USB sharing feature.



Use the cables that came with the switch to connect each PC to the switch.



Often, the keyboard and mouse connect to USB ports on the front of the switch. In our example, two buttons in the middle of the switch are used to swap focus between the two connected PCs.

capabilities, remove the speaker and/or microphone cable from the back, as well. Disconnect the mouse and keyboard from the original computer.

Use one of the cables that came with the switch and connect one end to the DVI, USB, and/or audio ports on the back of one of the PCs. Repeat this process for the other computer.

Connect the ends of one set of cables to one of the input ports on the back of the switch, and then repeat this process for the switch's other input port.

Step 2: Connect the keyboard and mouse. Plug the keyboard and mouse into one of the available USB ports on the front of the switch. These may be located somewhere else on the switch, as well, but be sure to connect them to ports labeled for use specifically with the mouse and keyboard, and not for generic USB ports intended for use with other shared peripherals.

Step 3: Connect the monitor. The switch should have a DVI or VGA output port, so connect the video cable that was previously attached to one of the PCs to the switch.

Step 4: Connect audio hardware (optional). If your switch came with support for audio hardware, connect the audio cables to the appropriate ports at this time. Most audio cables (and audio cards) have color-coded ports, but the colors don't always match up properly, so be sure to check the manual when connecting these cables.

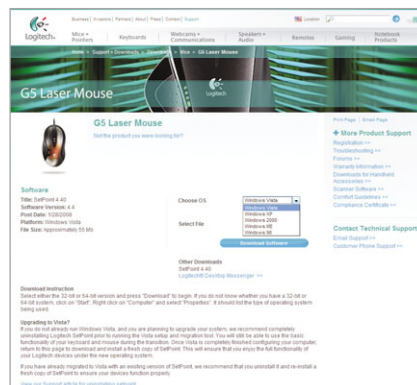
If the switch supports shared USB peripherals above and beyond the mouse and keyboard, don't attach that hardware yet. Often, you must install a driver (software that lets hardware

interact with Windows) before attaching the USB peripheral, or the device may not install properly.

Step 5: Turn on the switch. At this point you should be able to plug in the switch's power cable and turn it on, but be sure to check the manual to make sure you don't need to power on the PCs first.

Step 6: Turn on the PCs. Turn on both computers and experiment with the switch to see which PC is connected to which port. Avoid switching to a port when the PC associated with it is not turned on, or the switch may feed garbage data to your monitor.

Step 7: Install drivers. If you have a generic keyboard and mouse, your work is over, and you can share the devices between both PCs by using the KVM switch. If either device came with a driver CD or has a driver available at the manufacturer's Web site, you need to install the driver on the new PC to take advantage of any special features



Don't forget to download and install the latest drivers for all of the hardware connected to the USB switch.

the mouse or keyboard support. This is also a good time to see if your original PC has up-to-date drivers for the keyboard and mouse and to upgrade them if necessary using the instructions provided at the manufacturer's Web site.

If the switch supports other shared USB devices, install those now. Your KVM switch or peripheral hardware likely came with instructions for doing so, but the safest method is to shut down one of the PCs, install driver software for the peripheral hardware on the other PC, and then plug the peripherals into the KVM switch's ports. The PC that is running should recognize and install the hardware. Next, shut down the running PC, disconnect the extra peripherals from the KVM switch, and turn on the other PC. Install the driver software, reconnect the peripherals, and now everything should be installed on both PCs so you won't have to disconnect anything in the future.

Check For Extras

Depending on the type of switch you purchased, there may be accessories available that make it more convenient to use. For example, some simple KVM hardware that consists of little more than a collection of cables often has an optional button available that you can mount somewhere on your desk and press to switch between the two PCs, instead of using keyboard commands or reaching into some awkward space to flip a switch. You can also bypass any of the KVM inputs without affecting anything, either. For example, many monitors have multiple video inputs, and you can use those instead of the ones on the switch if you don't mind manually switching between them using the monitor controls. KVM switches that are made poorly can degrade the video signal before it is passed on to the monitor, so you may get better video quality using a direct connection. As with most PC technology, experimentation is the key. ■

BY TRACY BAKER

Basic Training With Boot Camp

One of the most compelling reasons to use a Mac is that you don't have to choose between Windows and Mac OS X. If you have an Intel-based Mac with OS X 10.5 Leopard installed, you have access to a handy little program called Boot Camp. This software lets you create a new partition on your Mac's hard drive where you can install and run Windows. You can then choose to boot into either OS X or Windows at any time.



Boot Camp Basics

There are emulators available that let you run OS X on a PC. An emulator basically “tricks” a computer into thinking that it has different hardware or software installed. However, because emulators are not native to the machine on which they're installed, programs may run slowly, and the OS (operating system) itself takes a hit in performance.

Before Apple started using Intel processors in its computers a couple of years ago, the only way to run Windows on a Mac was also by using an emulator, such as Virtual PC. However, now that Macs come with Intel processors installed, it is possible to run Windows on a Mac without emulation. All you need to do is install and set up Boot Camp, which will partition your drive as a dual-boot system that can run both OSes.

Boot Camp is not compatible with all versions of Windows. It will work with Windows XP and Windows Vista. Not only can you run Windows on your Mac, but you can also use standard Windows drivers, too. This lets you connect to the Internet while running Windows, print to a connected printer, connect a digital camera, and much more. Essentially, when you boot into Windows using Boot Camp, you will have an experience that is identical to using an actual PC. This makes Boot Camp the perfect tool if you want to switch to a Mac but still have a handful of Windows-only programs that you need to use. With Boot Camp, you can have the best of both the Mac and Windows worlds. All you need is your Mac, OS X 10.5 Leopard (which includes Boot Camp), and a copy of Windows.

Easy To Use

The best thing about Boot Camp is how easy it is to use. In the past, I've struggled with repartitioning hard drives to create dual-boot Windows systems, including a system that could run both Windows 98 and WinXP. This was never a simple

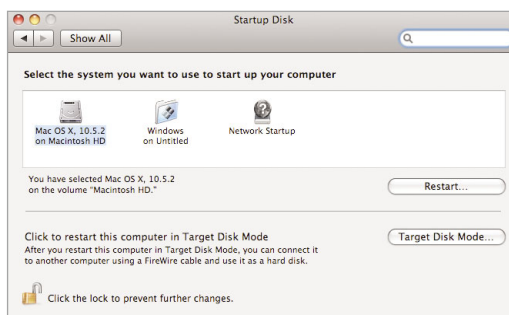
process, but creating a Windows partition with the Boot Camp Assistant is easy. Just double-click the Boot Camp Assistant icon in the /Applications/Utilities/ folder and follow the on-screen instructions to create a Windows partition. You won't lose any of the data already stored on your Mac when you do so, because the Boot Camp Assistant creates the new partition dynamically.

The Boot Camp Assistant will guide you through each step of the process, including inserting your Windows installation disc to install Windows and inserting your Leopard installation disc to install all of the Windows-compatible drivers.

By default, your computer will automatically boot into OS X, but you can change your default startup system in System Preferences by clicking the Startup Disk pane. My favorite way to use Boot Camp, though, is to press and hold the OPTION key while restarting my computer. This brings up two small icons on the screen: one for OS X and one for Windows, so I can choose which OS I'd like to use.

Few Drawbacks To Using Boot Camp

If you need to run Mac and Windows programs simultaneously, Boot Camp isn't the best option for you, because you can't use OS X and Windows simultaneously. If you want to run Mac and Windows software at the same time, you should consider a program such as SWsoft's Parallels Desktop (\$79.99; www.parallels.com) or VMware Fusion (\$79.99; www.vmware.com). These programs let you use Windows and Mac programs simultaneously and even copy and paste between Windows and Mac programs. The drawback is that these programs are simulators. Windows does not run natively in Parallels Desktop or VMware Fusion, so performance isn't as good as when you use Boot Camp. ■



After you run the Boot Camp Assistant and install Windows, you can use System Preferences to choose whether to boot into OS X or Windows by default.

WEB TIPS

Enhance Your Time Online

Fix Problem Pixels

Problem: I have a tiny bright spot on my LCD monitor. Is my screen shot or can it be fixed?

Solution: LCDs sometimes have pixel problems. Commonly called dead pixels, these problems actually fall into three categories: dead pixels (the red, blue, and green lights that make up a pixel are all permanently off), hot pixels (the RGB lights are always on, making a constant white spot), or stuck pixels (one or more of the sub-pixel colors are always on or off). Dead and hot pixels are usually manufacturing defects and are not easily user-correctible. But stuck pixels can often be massaged back to life by quickly flashing colors on and off. How do you do that? Go to Kill-DeadPixel(killdeadpixel.com) and drag that shimmering animated image over the problem area. Hopefully that will save you a service call.

Photoshop Express

Problem: The digital pictures that I take all need a little work before they're ready to show friends and family. Even though Adobe Photoshop is the industry standard, it seems too expensive for what I need to do.

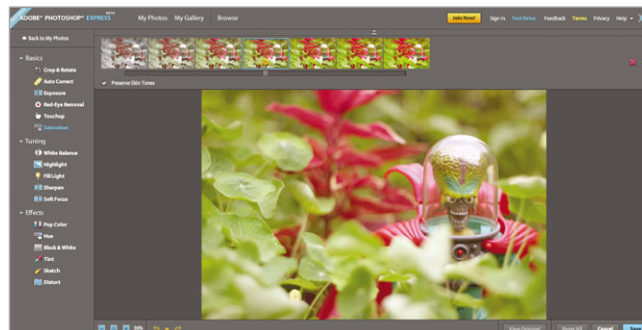
Solution: For some time now, Adobe has made an entry-level product called Photoshop Elements

aimed at consumers and priced much lower than the full version. Just recently, Adobe has upped its consumer game and released Photoshop Express as a free, Web-only application (www.photoshop.com/express). Just sign up for a no-cost account, and you're ready to upload and edit your photos. Express is a far cry from the powerhouse that is Photoshop (even more so than Photoshop Elements), but the clean layout, simplified toolset, and free 2GB of storage are surprisingly cool.

StickK Your Money Where Your Mouth Is

Problem: I'm really bad at sticking to personal goals.

Solution: It's super easy to back out of an agreement, even one you make with yourself, if you have nothing to lose. The Web site StickK (www.stickk.com) offers to help you complete your goals by acting as broker to your "Commitment Contract." If you break your word, your reputation suffers. Not enough heat for you? You can also put up a cash incentive to complete your



Photoshop Express is a perfect companion for Facebook- and Flickr-obsessed users.

goal. Succeed and you get it back. Fail and your money is forfeited to a charity of your choice.

Avoid High Rents

Problem: In the midst of this crazy housing market, how can I make sure I'm not getting overcharged for rent?

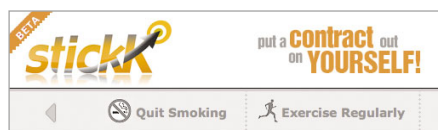
Solution: No matter what the current situation is, no one wants to pay more for rent than one should. Whether you are trying to negotiate with your current landlord or are looking to move to more affordable digs, check the Rentometer (www.rentometer.com). This site provides a comparison between your rent and the span of rental values by proximity. It also shows

you a map of other units on the market for less than your current amount. This is a great tool for apartment hunters.

Get Your Group Texting On

Problem: Is there an easy way to text multiple people at once?

Solution: Some phone services allow you to send a single text message to multiple people, but others do not. Swaggle (www.swaggle.mobi) is a free service that offers a work-around to that feature deficiency. Sign up online, put friends into custom groups, and get to texting. If someone replies, the message will be sent to everyone in the group—a feature you won't find with many cell phones. There's even a custom interface for iPhone users. If you routinely use text messages to coordinate info between friends, this service can certainly help simplify the process. ■



Whether you're trying to lose weight, quit smoking, or spend more time with the kids, don't just say you're going to do it; StickK to it.



How To Have An Eco-Friendly Summer

Ecotourism.net

www.ecotourism.net

If you're new to the eco-friendly scene, a term such as "ecotourism" might be unfamiliar. After you check out Ecotourism.net, you should have a well-rounded idea of how to save the world through economically minded travel. You can access the Directory to search accommodations, tours, and other destinations that support global development and the preservation of local environments. If you join the ECOCLUB, you'll benefit from commission-free services, including Mutual Online Support for answers to eco issues. Connect to a cooperative network of eco-friendly businesses so you can travel the world with a cause.

Green Living Ideas

www.greenlivingideas.com

If you have some vacation days to fill up, there seems to be endless options: grilling, outdoor recreation, and appealing destinations. Your summer can truly become green when you use Green Living Ideas on your days off. Some suggested ideas include buying USDA organic beef for your BBQ, going for a walk on the nearest nature trail instead of the gym, or planning an adventure expedition to a rugged environment. The site provides practical, eco-friendly topics, from Food And Cuisine to Health And Fitness to Work And The Office. Subscribe to the GreenTalk podcast to learn more about an ecologically oriented lifestyle.

GAIAM

www.gaiam.com

Gaiam is pronounced "guy-um" and is a combination of "Gaia," or mother earth, and "I am." This earth-friendly Web site seeks to provide goods and services for those who value the environment and a healthy lifestyle. Gaiam offers alternative products for improving your fitness decisions, air quality, and meditation practices. At the Outlet Sale, you can purchase sale products, including organic cotton jackets and vintage stripe bedding. As you move on to the Solar Living section, you'll find a one-stop spot for solar education in wind power, water pumping, and building a sustainable library.

EcoTour Directory

www.ecotourdirectory.com

Here is another site for travelers with an interest in the earthly benefits of ecotourism. As you browse the long list of world countries in Eco Tours, you'll find an eclectic variety of eco-spots to visit. Eco Tours in the United States offer a re-creation of the Lewis and Clark expeditions—you'll relive America's history through camp tours, fishing and river trips, or custom tours. In South Africa, you can experience a photographic safari while you do your part to conserve biodiversity and support the local community in its effort to protect its park. The EcoTour Directory provides Eco Travel Guides, travel tips, and ecotourism books.

GreenLightMag.com

www.greenlightmag.com

The online version of *Greenlight* magazine is an excellent resource for green summer lovin'. Discover which beaches have the best water quality in the Health & Fitness section or consider visiting one of the top 10 farmers' markets in the nation featured in the Food & Drink section. You can easily search the magazine archives for seasonal issues within the last two years. Read the monthly *Greenlight* online newsletters for tips on how to become more eco-smart as the year progresses. If you're interested in green gifts for yourself or others, click the Shop menu to peruse lists such as 50 Great Green Gifts.

Green Vacation Hub

www.greenvacationhub.com

Green Vacation Hub is a comprehensive list of destination profiles of worldwide eco-friendly retreats. Select a location and research detailed information and compare the Green Profiles of remote bed & breakfasts, major hotels, and lakeside resorts. When you click View Details of the specific lodging, scroll down for information about energy-efficient electricity options, recycling, and food donation programs. If you'd like to post your ecological property on Green Vacation Hub, select List Your Green Property and sign up to be a global member.

TreeHugger

www.treehugger.com

You don't have to be a radical environmentalist to be a TreeHugger. This site has compiled some helpful Top 10 Tips to help carry out your eco-goals. Check out How To Green Your Summer in the Take Action menu. TreeHugger suggests that you buy some local food at farmers' markets, utilize reusable dishes, and plant natural bug repellents. You can also learn How To Green Your Outdoor Sports, Water, Meals, Cleaning, Wardrobe, Community, and more. Click the Culture & Celebrity section for famous names following green trends.

That's News To You

Finding the appropriate online group to match your interests can be a monumental task. So each month, we scour the Internet to bring you the friendliest forums and most interesting bloggers the Web has to offer. This month, we talk to a blogger with green aspirations for world travel.

Green Globetrotter

www.greenglobetrotter.com

Green destinations exist everywhere from Alaska to Wales to your local park; Green-globetrotter.com is one online destination where you can begin learning about environmentally friendly travel options. You'll find featured locations, such as Kangaroo Island in South Australia, Cavallo Point next to the Golden Gate Bridge, and the Allegheny National Forest in Pennsylvania. Additionally, there are eco-conscious product features—some include bamboo blankets and carbon-considerate automobiles.

Jessica Blair, creator of Green Globetrotter, says her blog exists to “enlighten readers on the growing number of environmentally friendly travel options—not to judge, simply to present the news and allow travelers to judge for themselves.”

You can travel far and wide to seek out your favorite green-space, but Blair says you can discover one in your own state. “There are plenty of amazing travel ideas in every city and state, from hiking to biking to fishing and more. Many state tourism Web sites are hopping aboard the green wave and pointing visitors to a focused place where eco-friendly lodging, attractions, and ideas are highlighted,” Blair states.

If you're new to the green scene, take time to learn how to you can be an eco-friendly individual. Blair hopes her site will “open the minds of travelers on the Web, giving them a resource for constant updates on what everyone in the travel industry is doing to create a healthier planet for tomorrow.”



Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month, we feature highlights from our pickings. This month, we take a look at green software that can save those trees giving you shade from the summer sun.

GreenPrint

www.printgreener.com

Wouldn't it be great if you could save the environment one paper at a time? This idea is now a reality, thanks to a Web site called Printgreener.com. You can save trees *and* money directly from your home with GreenPrint's waste-eliminating software.

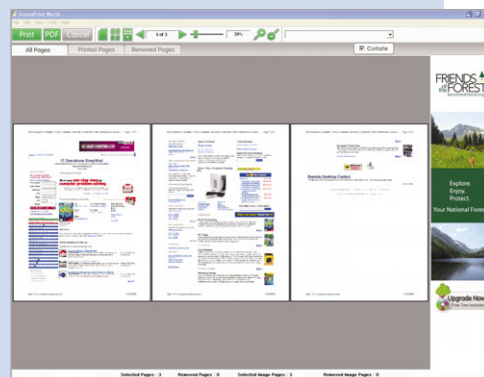
The site offers three versions of GreenPrint, with added features as you upgrade to the next program: World, Home Premium, and Enterprise. By downloading the free World edition, you can start cutting down on excess printing. The Home Premium edition (\$35) offers tech support through email, approval for commercial use, and frequent version updates.

Purchasing the Enterprise edition (\$70) provides enterprises with every feature available, including a recycle print function, company-wide reporting, and expanded tech support.

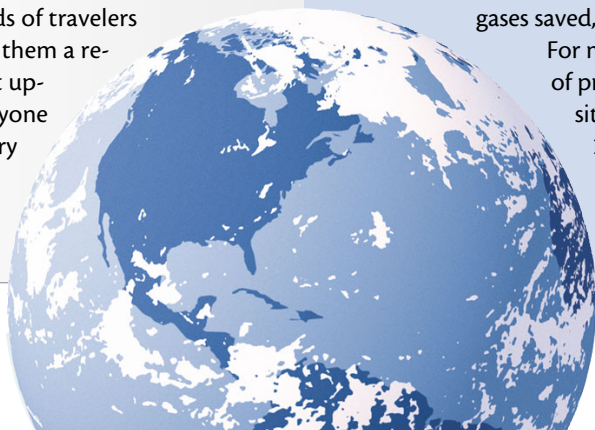
GreenPrint software is easy to use because it makes paper-saving a simple process through several steps. After installing the program, GreenPrint becomes one of your selected printer options. Choosing GreenPrint in the Print menu will take you to the GreenPrint Preview. Here, you can display the pages of your document two ways: as a single page or all at once with Auto Scale.

Pages that meet the “waste criteria” standard will be highlighted in red—this can include URLs, banner ads, and disclaimers. Right-click to Remove A Page, Remove Text, or Remove Images. When you right-click again to include content, the page turns white and is now part of the print job. If you decide you don't want to print your document yet, GreenPrint saves the pages in PDF (Portable Document Format) for future use. GreenPrint also integrates a tracking report that keeps a record of how much paper and cash you've saved. It also shows the greenhouse gases saved, measured in pounds.

For more information on the environmental impact of printing and paper consumption, check out the site's Eco Facts. GreenPrint supports Windows 2000/XP/Vista and requires a PC with at least 256MB of RAM. The program .NET Framework 2.0 is installed automatically when you download GreenPrint. ■



Are you always printing that extra sheet of paper because of a URL or ad banner at the end of a Web page? GreenPrint World highlights these wasted pages for you, so you'll save trees even before you recycle.





Sell Your Photos Online

Build Some Stock For Your Collection

Photographers around the world believe in the worth of their own photos, so why shouldn't they find a way to share their talent and earn an income along the way? At Web sites such as ShutterPoint, Dreamstime, PhotoStockPlus, and BigStockPhoto, you can upload, organize, and sell your images online. We've explored these four sites to show you how to become a member, acquire royalty-free commissions, and join the ever-expanding photography community.

ShutterPoint

ShutterPoint (www.shutterpoint.com) offers extensive services for both photographers and photo buyers. If you're simply interested in browsing and buying stock photos, it's easy to register as a free user and reap the benefits of owning royalty-free images. (A photo buyer who purchases a royalty-free image is not required to pay additional usage fees other than the price of the photo itself. Selling a royalty-free photo allows the buyer unlimited use of the photo, but the original photographer still holds the copyright.)

Begin by clicking the Browse Images link in the upper-right corner. From

there, you can browse photos by Most Recent, Highest Rated, Most Popular, Most Viewed, and Random to become familiar with the many genres throughout the site. Or, head straight to specific categories, such as Botanical, Isolated Objects, or Technology. Tools and features for photo buyers include Image Zoom, a More Like This link that leads to similar images, and an easy checkout process. Members can rate photos, either anonymously or as an identifiable user to provide feedback for photographers.

Those registering to sell or promote photos will need to pay a monthly storage fee. Start with the minimum price of \$12 for six months (50MB of storage) if you're not sure if you want to commit yet. For \$49 a year, you can store up to 200MB of photos. Amateur photographers should see the value in ShutterPoint's security options and guest monitoring. To prevent image theft, create a custom watermark or learn how to disable the Copy and Save As commands. Additionally, you can review the status and popularity of your individual photos. Commission rates for photo-sellers are relatively high, with payout ranging from 70% for Standard Royalty-Free License to

85% for Full Royalty-Free License. Standard license permits nonresale, print usage for up to 10,000 copies; full commercial license authorizes resale and unlimited photo runs. (These stipulations may vary depending on whether a buyer uses the photos for commercial or editorial use.) Pricing for standard photo licensing begins at 99 cents per photo and increases as you expand the rights of usage allowed.

ShutterPoint members enjoy the online community through forums and feedback. According to member Cindy Donegan, "ShutterPoint gives me both an opportunity for sales and improving my photography. Having active forums changes the site from sales and viewing only, into a community of photographers exchanging ideas and offering opinions and help to each other." Mike Dawson says, "The searchability is good. The community is good—the ability to talk to other photographers . . . all over the world."

Dreamstime

Dreamstime (www.dreamstime.com) lets anyone sign up for zero cost. The site is structured into more concise image categories compared to ShutterPoint. For example, click Browse For Stock Photos, and you'll find a member's collection under Categories titled Industries. You can then narrow your search even further by choosing a specific subcategory, including Computers, Education, or Military—this makes for easy navigation, although you'll need to sift through quite a few photos even after this point. Dreamstime does include a helpful browsing feature to view photo detail as you move through each page: Hover your mouse pointer over any thumbnail to see an enlarged version of the photo, along with its ID number, pricing level, and megapixel size.

If you're using Dreamstime primarily to purchase photos, you'll likely use the Designers Area on a regular basis. On this consolidated tab, you can buy credits for image

purchases, easily access your downloads, and utilize a tool called a Lightbox. Lightboxes are folders in which you can store, manage, and share images. This feature appears on many stock photo Web sites to help members organize photo collections for different clients. Dreamstime operates with a photo credit system for purchasing royalty-free images. There are three buying options: credit packages, subscriptions, and custom credit orders. The Photographers Area tab includes subsections so you can upload files, sell your images, and keep track of your earnings.

Dreamstime also offers a Free Images section where you can search through hundreds of prints, designs,

however, it is not easy to achieve meaningful income unless you work on it over a period of time," she says.

PhotoStockPlus

At PhotoStockPlus (www.photo-stockplus.com), members will need to register with a full name, email, phone number, and password; you'll also create a username that will serve as your gallery Web site address. Pro-membership fees are offered monthly or yearly for storage space ranging from 300MB (\$24.95 per month) to 10GB (\$499 per year). Event photographers will be interested in PhotoStockPlus because of its "business in a box" sales solution that simplifies uploading, organizing,

event photography tools and royalty-free stock sales. With royalty-free sales, you keep 85% of the profits, maintain the copyrights on all of your images, and can customize your photo prices.

BigStockPhoto

If you prefer a photo credit system similar to PhotoStockPlus, then you may want to join BigStockPhoto (www.bigstockphoto.com), as well. The first step after signing up for an account is downloading image credits. The lowest price is \$1 per credit and downloads cost anywhere from one to six credits, depending on the size of your desired image. Members who want to sell images are required to

take the Photographer Test. Those who pass can upload photos that will be analyzed by BigStockPhoto editors. Photographers earn between 50 cents and \$3 per individual download.

One highlight BigStockPhoto provides is the Photos We Need Most page. Here, you'll see suggestions of in-demand shots that will likely bring you more profit. As you learn what's needed at sites such as this one, you'll



A. With a Shutterstock account, you can add funds, customize your home page layout, and link Shutterstock to your other sites.

B. Dreamstime offers some high-resolution stock photos as free downloads.

C. Creating an event album at PhotoStockPlus is easy; simply enter your information in the boxes and select a Web site template.

and original photographs. These images serve as a preview to a particular artist's work. Amateur photographers should take advantage of this section because of its high number of images views—it's an easy way to gain online exposure. Dreamstime member Ling Xia understands the value in promoting personal photos effectively. "Micro stock photo sites can help amateurs market their photos while learning. However, the amateurs must be willing to put in the time and effort, and should not be overly frustrated by the initial difficulties. Yes, it is easy to get a few photos accepted in some sites,

and selling your photo portfolio. The site provides a personal ecommerce-enabled Web site, which allows you to set prices on photos and print them on numerous gift items. It also includes bulk uploading software and marketing material designed to help photographers sell their best work.

Get started with a 10-day free trial account that includes 50MB of storage. If you simply want to find out what your site might look like, you can create an event album. To upgrade your account in order to sell stock photos, you'll need to choose a membership plan. Pro Membership features both

begin to understand how to get creative yet take a lucrative photo. "The best part of belonging to a site like BigStock is the learning process and the hopes of selling your images," says BigStockPhoto member Marianne Venegoni. "I think an amateur benefits from both learning and selling, and a professional benefits from selling their images and maybe they learn a few things along the way."

(Visit www.smartcomputing.com to see a chart that compares various sites that offer royalty-free photo sales.) ■

BY JOANNA SAFFORD

Top 10 Favorite Freebies, Part II

In my January confetti-strewn, champagne-stained, headache-inducing column, I started off the new year with a potpourri of my Top 10 Favorite Downloadable Freebies. I concluded the column with an invitation for you to share your favorite free programs. To sweeten the pot, I promised that if your submission was selected for publication, you would receive a life-altering, spiritually infused, dual-purpose Mr. Modem mouse pad, which doubles as a yoga mat for smaller individuals.

Your response was so overwhelming, it made me weep—in a manly, “There-must-be-something-in-my-eye,” kind of way. The competition was stiff, unlike the thick and luxurious, four-color, neoprene mouse pad received by each contributor. I herewith present (in alphabetical order) my Top 10 Favorite Freebies, Part II, selected from your suggestions, each one tested at the prestigious MMTL (Mr. Modem Testing Laboratories) in Los Alamos:

1. **Audacity** (audacity.sourceforge.net) is an outstanding sound editor that permits recording from microphone, cassette, or other input device. You can adjust and select recording levels and quality; remove audio snaps, crackles, and pops; and add special effects such as fade-ins and fade-outs. I’ve used it many times and agree with J.H.’s recommendation that Audacity deserves a place on this distinguished list.

2. **Auslogics Disk Defrag** (www.auslogics.com/disk-defrag) is faster than Windows’ native disk defragmenter, plus ADD holds my attention better (ironic, isn’t it?) by providing graphical disk-defrag mapping, so you can view the defragmentation in progress and its results. Works well with Vista, also. Thanks to T.P. for submitting this fragtastic app.

3. **CCleaner** (www.ccleaner.com), formerly known as Crap Cleaner (I wonder why they changed the name?), cleans out temporary and unnecessary files and digital residue. It includes a Registry cleaner J.T. characterizes as “not the best, but not overly aggressive,” which also describes my favorite wine.

4. **Foxit PDF Reader** (tinyurl.com/4a4a6), suggested by A.P., is an outstanding alternative to the bloated Adobe Reader. The Adobe Reader is a ponderous porker, weighing in at 22.4MB; Foxit is a svelte 2.13MB. End of story. The Foxit Editor allows you to edit PDF files and fill in online forms.

5. **Jott** (www.jott.com) will convert your voice into email or text message. Call a toll-free number from your cell phone and leave a voice message. Jott will translate your spoken words into text and forward it to an email address or send a text message. G.L. uses it for sending reminders and notes to herself. Jott is free, but standard text messaging rates apply.

6. **Picasa** (picasa.google.com) is a must-have if you take digital pictures, according to S.B., and I agree. Another tasty morsel from the Google digital kitchen, Picasa is outstanding for organizing, managing, and sharing photos online. Once installed, it will locate all photos on your PC and sort them by date.

You can easily arrange photos by dragging them between folders or include one photo in several albums. You can also password-protect photo collections to thwart the paparazzi. Picasa also includes basic editing functions.

7. **Revo Uninstaller** (www.revouninstaller.com) removes programs and all related Registry entries and hidden files. Even if you can’t uninstall a program using Windows’ Add Or Remove Programs function, Revo will get the job done. Thanks to J.Z. for this gem.

8. **Screen Hunter** (tinyurl.com/28kqd4), contributed by R.T., captures the active screen, or portions thereof, in any size. You can then save your scalable screen capture to any file or folder. The free version has a few limitations but is more than adequate for most users. Plus and Pro versions are available for \$19.95 and \$29.95, respectively.

9. **Site Advisor** (www.siteadvisor.com) was created by MIT engineers to make the Web safer for family and friends. Using a system of automated testers, the Site Advisor continually patrols the Web, visiting sites, downloading files, and entering information on sign-up pages. Good, bad, and ugly results are documented and appear as red, yellow, and green ratings within Internet Explorer and Firefox to help users stay out of harm’s way as they visit Web sites. Thank you, T.P.

10. **Unlocker** (ccollomb.free.fr/unlocker), recommended by P.P., deletes any file or folder. When you’re face-to-face with an intrusive Windows message that dares to tell you that you cannot delete a given folder because it’s being used by another person or program, a simple right-click with Unlocker on board and blammo, it’s gone.

Thanks to all contributors! I’ll be back next month with a special anniversary column. What anniversary? Stop by next month and read all about it. You won’t want to miss it. ■

BY MR. MODEM

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. “Mr. Modem’s Weekly Newsletter” provides personal responses to subscribers’ computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit www.MrModem.com.



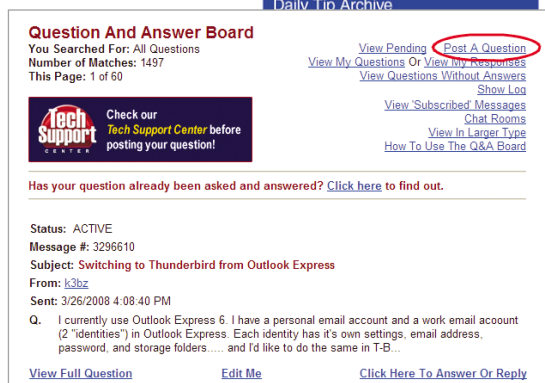
Q&A Board

Computers are great when they're running properly. But when you have a computing problem, finding answers can be frustrating. So if you're having trouble with Windows XP or can't find a solution to a computing question or problem, consult the *Smart Computing* Q&A Board. This subscriber-only feature is a great resource for getting quick and helpful responses to your computing problems.

Before posting a question on the Q&A Board, be sure to check out the Tech Support Center and all of its extensive resources including an error message search, solutions knowledgebase and troubleshooting articles.

It may also be helpful to utilize the Q&A Board search at the bottom of the page, because, most likely, someone has had the same tech woes that you are experiencing. You can search by message number or keyword (Windows XP, for example) and sort your results by relevance or a specific date range to make finding answers quick and easy.

1. Log on to SmartComputing.com and click on the Q&A Board link.
2. To ask your question, click the Post A Question link in the upper-right corner of the page.
(Make sure you are logged in to the site.)
3. Use the Subscribe To This Message link at the bottom of the question to be notified via email when answers are posted.



Chat

Whether you need to troubleshoot some misbehaving software or want to discuss the pros and cons of Vista, the *Smart Computing* Chat Room is the place to be. Visit www.smartcomputing.com and click the Computing Chat Room link in the blue box on the left to get started.



Security

If Spam is clogging your email inbox, learn how to clear it out (and keep it out). Scroll down to the Basic Security & Privacy Troubleshooting Articles section of the Tech Support Center to read up on this and other annoyances.



My Favorite Topics

Keep up on the topics you're most interested in. Click the My Favorite Topics link on our home page to begin receiving alerts when we publish articles about subjects that interest you.



Smart Computing's Tip Of The Day (March 30, 2008)

Medusa Goes To The Salon

The cords, cables, and wires behind an entertainment center can be tough to keep clean. Oftentimes, they're tangled together and so close to the wall that only the cat dares to venture back there. Prevention goes a long way here: Use cable ties, wraps, or guards to keep things organized and free of dust. When it comes time to clean, first unplug your TV and any other devices from the wall to avoid a shock. (This may cause some of your components to reboot, so it's a good idea to jot down any special settings so you can reset them later.) Use a towel to remove as many dust bunnies as possible. Finally, use a vacuum with an extension hose to carefully sweep underneath and around the cables.





WIRED

Wireless technology is transforming nearly every aspect of our lives. Think about the ways that mobile communications, mobile computing, and mobile entertainment affect the way we live, the way we work, and the way we play. Underlying all that mobility is the 19th century technology of radio transmission, paired with 20th century

circuit boards and 21st century ideas about how technology can serve us. This month's feature package shows the extent to which wireless is more than just cutting back on cables. In each section, we'll describe how wireless can help you live, work, and play better. We'll also provide practical guidance to setting up some recommended devices and equipment.

Look, Ma, No Wires

You should at least understand the basics, so we'll begin with an overview of wireless technology in general. What's the difference between 802.11b, 802.11g, and 802.11n? And where do Wi-Fi and Bluetooth fit into all this? We'll answer all these questions and more in "Cut The Cord" on page 48. We'll also talk about practical ways to prepare your network for all the demands PCs, TVs, and peripherals will place on it.

The benefits of wireless cameras might not be so obvious. For years now, cameras have been pretty portable, but digital cameras have never really been free from physical ties to a PC. How much easier would it be to send your pictures to a hard drive or printer without having to deal with yet another USB port or docking cradle? We'll show you in "Wireless Cameras" on page 50.

Media Extenders act as conduits to push audio, video, pictures, and other content from your computer to televisions, stereos, and other traditional entertainment devices. Common examples are Media Center PCs, and Microsoft's Xbox 360. In "Multimedia For Couch Potatoes" on page 54, we'll show you how each takes advantage of wireless technologies to help spread multimedia around your house without running wires through the walls.

Remember the days of wide-ribbon printer cables? They went out with ink ribbons and those big stacks of perforated paper. Wireless also means ribbonless. On page 58, we'll discuss new wireless printing options that,

Adding an entertainment device, such as the Xbox 360, can make your wireless network even more useful.



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WIRELESS HOME

Going Wireless With PCs, TVs & Peripherals

along with options for easier printer sharing, will help your printer join the modern working world.

When we talk about wireless TVs, we aren't referring to plain-old rabbit ears, though they're a great source for free wireless HDTV (high-definition television). We're talking about portable screens and network-enabled displays that bypass extenders and other intermediary tools to connect with your network directly. For more information, see "Wireless Watching" on page 60.

If you're used to thinking about USB as nothing more than a convenient and fast cable for connecting devices to your PC, you probably haven't been keeping up with developments in the serial bus industry. We're here to fill you in on the exciting new world of Wireless USB (see "Unwire Your Peripherals" on page 57). We even have examples of how you can deploy the technology on your network.

VoIP isn't an obscure new text messaging acronym. It's Voice over IP (Internet Protocol), and it's revolutionizing telephony. If you haven't already, you'll soon consider replacing your traditional landline with a networked

phone system that connects to the wider world via an Internet connection. VoWiFi is the latest iteration of this approach, running IP telephone systems over a wireless connection. We'll discuss the pros and cons and help you understand the existing options in "Pick Up The Phone" on page 62.

What's Next?

Finally, we offer a brief glimpse into the future in "What's New With Wireless?" on page 65. Which compo-

nents will you be able to untether from your computer? Which new features can you expect to see in the next year or two, and how can you prepare to take advantage of them now? We won't have all the answers for tomorrow, and we can't cover every possible wireless application. But we'll make sure you have all the information you need to live free, work smart, and play hard with your wireless-enabled gear. ■

BY GREGORY ANDERSON



Wireless printers, including photo printers, can make both your cameras and printing more portable and convenient.

Cut The Cord

Wireless Technologies Set Us Free



One by one, it seems, cables are disappearing from behind (and in front of) our computers, televisions, printers, and other electronic devices. Headphones, speakers, keyboards, mobile phone handsets, and other devices can now operate without wires thanks to Wi-Fi, Bluetooth, and Wireless USB.

Wireless Internet, once little more than a convenient but slow alternative to blazing-fast wired Internet speed, now supplants the need for an Ethernet port and cables in every room of the house and allows users to conduct a variety of computing operations without wires. Furthermore, Wi-Fi currently boasts speeds satisfactory for streaming video and stands on the threshold of an even faster standard.

As wireless technologies continue to develop and improve, our electronic lives become less cluttered and more convenient. In our homes, we have the ability to create networks for fast Internet browsing, file sharing, media streaming, and more. The best part is that this fast, versatile wireless technology is not for the tech geek or the wealthy; it's eminently affordable and built into an increasing number of electronic devices that populate the average person's daily life.

There is frequently confusion surrounding which wireless technologies do what, as well as if they're competing or complementary technologies. The reality is that each is distinctly different, yet there is certainly some overlap in what they do.

Wi-Fi

Wi-Fi is designed to have the longest range of the wireless bunch and is ideal for creating a home- or small-office network. Essentially, it's wireless Ethernet. Frequently, businesses will create Wi-Fi networks so that customers can enjoy fast wireless Internet while visiting. Many Wi-Fi hubs close enough in proximity that their signals overlap can create a much larger network; this technique has been employed, with mixed results, in municipalities nationwide.

Wi-Fi is a wireless radio technology based on a set of IEEE standards known as 802.11. Early iterations of Wi-Fi were the 802.11a and 802.11b standards. 802.11b offers wireless speeds of up to 11Mbps (megabits per second), which, when first introduced, was a boon to wireless Internet users everywhere, although it paled in comparison to wired Internet speeds of 100Mbps. The 802.11a standard is much faster than 802.11b at 54Mbps, yet because it operates in the 5GHz spectrum and requires much more expensive devices, it never caught on with general consumers and is quickly becoming obsolete.

Currently, the fastest (fully approved) 802.11 standard is 802.11g, which offers speeds of up to 54Mbps and a range of 300 to 1,000 feet. Products built to these specifications, such as routers, are inexpensive yet reliable. Both 802.11b and 802.11g operate in the 2.4GHz spectrum.

Seemingly any minute now, however, the new 802.11n standard is set to replace 802.11g. There are still some details for

the powers that be to hammer out, but there is no doubt that 802.11n is on the horizon. There have been “pre-n” and Wi-Fi Certified 802.11n draft 2.0 products on store shelves for some time now. The final specification for 802.11n should be so similar that interoperability between draft 2.0 and the final 802.11n standard (due to be completed sometime in 2009) should be all but seamless. Speeds for 802.11n are expected to be four to eight times faster than 802.11g.

As the transition takes place, however, you can do plenty with a LAN (local-area network) powered by Wi-Fi in your home. In addition to having fast wireless Internet throughout your entire house, you can also share files among computers, print wirelessly, and stream media between computers and your television.

Bluetooth

There is often misunderstanding when it comes to Wi-Fi vs. Bluetooth. The primary difference is in the role each plays in the wireless arena: While Wi-Fi is designed for LANs, Bluetooth is dedicated to PANs (personal-area networks). The difference between the two may sound like semantics, but LANs and PANs are not the same. While a LAN is designed to be an IP (Internet Protocol)-based network to which a number of computers and devices can be connected for home or office use, a PAN is a much smaller area that has nothing to do with the Internet.

Bluetooth is a short-range wireless protocol used to connect any number of devices together, such as a hands-free headset to a mobile phone. Bluetooth’s main competitor is Wireless USB. The most current version is Bluetooth 2.1, released in July 2007, and offers data throughput speeds of up to 2.1Mbps while consuming less power than previous versions. Bluetooth devices can have a range up to about 100 meters, although this number drops

Wi-Fi Standards

There are several Wi-Fi standards; some clarification as to which one does what is valuable.

	Speed	Spectrum	Status
802.11b	11Mbps	2.4GHz	Still in use, though being replaced by 802.11g
802.11a	54Mbps	5GHz	Never caught on with consumers; becoming obsolete
802.11g	54Mbps	2.4GHz	Currently the fastest, fully approved Wi-Fi standard
802.11n	300Mbps	2.4GHz	Due to be finalized in 2009; set to replace 802.11g

significantly depending on the class of the receiver in a particular device.

Though many devices have Bluetooth built-in, others require a USB dongle. A desktop computer that uses a wireless mouse may not have a Bluetooth receiver/transmitter built into the motherboard and would therefore need a dongle to communicate with, for example, a wireless mouse.

Bluetooth operates in the 2.4GHz spectrum, which can make it susceptible to interference from other wireless devices that operate on the same frequency, such as microwaves and cordless phones. Another issue, which is often a problem with wireless technology, is security. However, the most recent releases of the Bluetooth standards have made progress on these issues.

Wireless USB

Like Bluetooth, Wireless USB is a short-range radio technology. It is based on the UWB (Ultra Wideband) platform, which reduces interference with other wireless devices. Like Bluetooth, Wireless USB is intended to create a PAN.

In essence, it’s the same plug-and-play technology that powers regular wired USB, only without the bird’s nest of wires. Furthermore, Wireless USB works with any USB device,

which makes it an easy technology to comprehend and implement. One drawback compared to Bluetooth, which transmits and receives signals between devices via a built-in chip, is that Wireless USB connections always require a dongle in a USB port on the device end. Essentially, you’re swapping wires for dongles, but the benefits of the latter far outweigh any inconvenience.

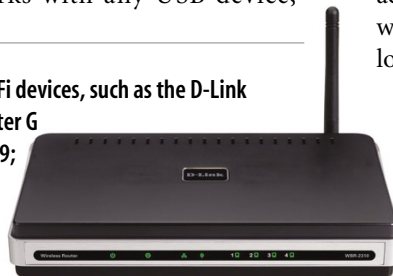
In your living room or home office, Wireless USB will probably look like a small box, which is the wireless hub, and dongles sticking out of every USB port on every device in the room—computer, printer, home entertainment devices, and more—but no wires.

Wireless USB 1.0 has targeted data rates of up to 480Mbps with a range of 3 meters (which is the same as wired USB). The speed drops to 110Mbps within 10 meters. Certified Wireless USB products are required to provide data encryption, so security is not an issue like it is with other wireless technologies. For more information on Wireless USB, refer to “Unwire Your Peripherals” on page 57.

Cord-Free

Whatever the device, chances are it has some wireless functionality that is either built-in or can be added with an adapter of some kind. If you’ve had it with wires and cables, take a good look at your equipment and evaluate how many of those cables you can scrap. You might be surprised at what wireless possibilities there are at home or at the office. ■

Cheap but reliable Wi-Fi devices, such as the D-Link WBR-2310 RangeBooster G Wireless Router (\$69.99; www.dlink.com), are readily available in stores.



BY SETH COLANER



Wireless Cameras

Enjoy A Little Photographic Freedom

Built-in Wi-Fi has proven to be handy in consumer electronics such as laptops, smartphones, and PDAs (personal digital assistants). Manufacturers such as Nikon and Sony have now applied built-in Wi-Fi support to digital compact cameras so that you have more flexibility over where, when, and how you transfer and share photos.

The Kodak EasyShare-One was the first to adopt wireless capabilities (it has since been discontinued), and others followed suit. Nikon offers the Coolpix S51c (\$279.95; www.nikon-usa.com), and Sony has the Cyber-shot DSC-G1 (\$299.99; www.sony-style.com), which both include wireless support. Also, Panasonic has recently announced plans to add wireless capabilities to its Lumix line.

A New Way To Share

Some wireless-enabled cameras give you the ability to email pictures to your friends and family, quickly upload pictures onto your computer from Wi-Fi hotspots, or let you wirelessly connect to other compatible cameras and devices to instantly share your photos.

The Sony DSC-G1 lets you wirelessly share photos between four linked DSC-G1 cameras or through

wireless peer-to-peer communication with compatible cameras. The DSC-G1 also lets you view photos through wireless transmission to DLNA (Digital Living Network Alliance)-compatible devices, including televisions and computers. DLNA is an industry standard for many electronic devices. Because consumers often find that their digital devices aren't always compatible with each other, DLNA was created by some of the world's top manufacturers to ensure that digital devices could work together. To determine if your computer or any other device is DLNA-certified, look for the DLNA logo, check with the device's manufacturer, or go the DLNA Web site (www.dlna.org/products) for a list of DLNA-certified products. DLNA-compatible devices can connect over Ethernet or Wi-Fi (802.11a/b/g), so you should be able

to send files from your camera to your computer over your wireless network. In the case of the DSC-G1, the camera can send files to a computer, but it cannot receive files from the computer.

You can use the Nikon Coolpix S51c with your home wireless network or a T-Mobile HotSpot (after you sign up for a T-Mobile HotSpot account). A T-Mobile HotSpot account gives you access to Wi-Fi in over 8,000 U.S. locations, such as hotels, airports, and coffee shops. At press time, Nikon and T-Mobile were offering six months of free service, which automatically begins the first time you connect to a HotSpot with your Coolpix S51c. To learn more about T-Mobile HotSpot services and locations, go to the T-Mobile HotSpot Web site (www.hotspot.t-mobile.com).

Frame It

Get the most out of your wireless digital camera by pairing it with a wireless digital photo frame. For example, Digital Spectrum offers the MF-8104 Premium MemoryFrame (\$349.99; www.dsicentral.com), a 10.4-inch frame with 256MB of internal memory. You can share your pictures via Bluetooth (USB Bluetooth dongle not included), the Web, or any 802.11b/g wireless connection. You can also share pictures among multiple frames.

For more information on digital photo frames, see our "Head-To-Head" review on page 18. ■



The Sony Cyber-shot DSC-G1 works with up to four other DSC-G1 cameras and DLNA (Digital Living Network Alliance)-compatible products.

To set up your account, go to www.mypicturetown.com and click the Sign Up link.

Go to the Wireless Settings option in the camera's setup menu and then select Network Profile. The camera will search for an SSID (Service Set Identifier), which is the name of the wireless network you are connecting to. Select the SSID to which you want to connect and then press the OK button. You will then be able to distinguish the connection as either a home or public wireless LAN (local-area network).

Next, you will be prompted to choose an authentication method. If you choose the Open System, you will also have to select an encryption method. If you select WEP, you will have to enter the encryption key, which is a code preset to work with your wireless connection. Once you've entered the encryption key, press the shutter-release button.

Now, you need to select whether you want the camera's IP (Internet Protocol) address to be specified automatically or manually. We recommend that you select automatic, but if you choose to do it manually, you will need to enter the number codes associated with the IP Address, a User Name, and then a Password. Once you are connected, "Done" will be displayed on-screen.

You can now transfer your images to my Picturetown. To do this, select the Playback mode and then press the Mode button. Highlight the world-shaped icon and then press OK. To choose which pictures to send to my Picturetown, use the scroll wheel to highlight the pictures and press the OK button to select them.

Press the shutter-release button when you're done selecting pictures. Select Yes when asked if you want to send the pictures, and then you will be prompted to connect to your SSID.

Thanks to these hotspots, you can upload your pictures to Nikon's Web-based picture storage service called my Picturetown. Archive photos by uploading pictures from your computer or through Picture Mail, the feature that lets you directly send photos from your Nikon S51c camera. Just send photos to the email address you used to register with my Picturetown, and not only will they be automatically uploaded into your my Picturetown account bank, but you will also receive an email with the image attached in your personal email inbox. With my Picturetown, there is also a button you can click to transfer your pictures to Flickr (www.flickr.com), a photo-sharing social networking Web site.

While Kodak has taken the EasyShare-One out of production, it has added other products that support wireless capabilities. For instance, the company now manufactures the Kodak Wi-Fi Card (\$99.99; www.kodak.com), a Wi-Fi-enabled memory card that lets you add wireless support to compatible Kodak products.

Learn To Let Go

As mentioned, the Nikon Coolpix S51c has a simple step-by-step process for wirelessly uploading pictures and sharing them with others using Nikon's Picture Mail and the Web-based storage bank, my Picturetown. To be able to email your pictures and send them to my Picturetown, you must configure a network profile in your camera's settings. Don't forget to set up your my Picturetown account before you start uploading pictures to it.

If you have already configured your wireless settings, your camera will automatically connect to the preconfigured SSID and then the pictures will be transferred.

Picturesque Possibilities

Don't let wires tie you down. Good memories aren't meant to be stored away, never to be shared with others. Wireless digital cameras simplify the transfer, storage, and sharing processes of your favorite photographs, making it easy to let your loved ones experience your milestone moments. ■

BY TESSA WARNER BRENNEMAN

Freedom For Everyone

You don't have to buy a new camera with built-in wireless support to reap the benefits of Wi-Fi. The Eye-Fi card (\$99.99; www.eyefi.com) is all you need to wirelessly upload your photos to your computer, the Web, and other devices connected to your wireless home network. It also doubles as a memory card with 2GB of storage. Just as with built-in wireless, you can transfer photos to Web sites, your computer, digital photo frames, photo printers, and more. It will fit any camera that uses an SD (Secure Digital) memory card, and it includes a USB memory card reader for simple setup. The Eye-Fi card supports 802.11b/g/n, so you'll always have the best available connection.

The Eye-Fi card allows you to upload your photos onto photo-sharing Web sites, such as Flickr (www.flickr.com), Google Picasa (picasaweb.google.com), Facebook (www.facebook.com), and more. If your computer has a wireless connection already configured, the Eye-Fi's software can find your encryption key and enter it automatically. ■

Go Wireless

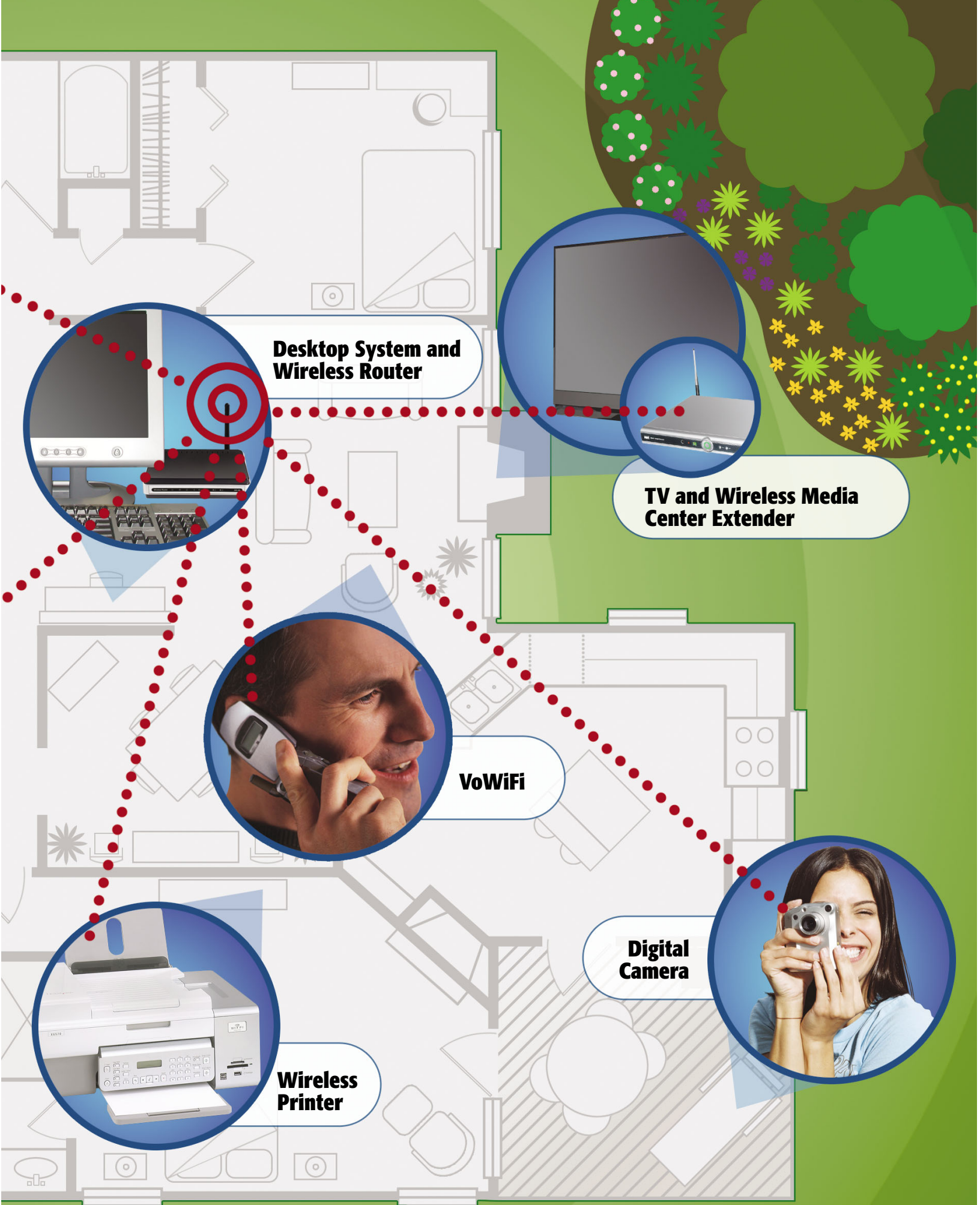
Are you ready to cut the cord? Although wired networks provide the fastest transfer speeds, today's most popular home wireless networking standards, such as IEEE 802.11g, are serious alternatives. A wireless network lets you place devices throughout your house without worrying about running Ethernet cables from them to the network router. It also gives you freedom to move your notebook around the house without tripping over cable clutter.

**Wi-Fi-Enabled
Notebook**



**Wireless
TV**





**Desktop System and
Wireless Router**

**TV and Wireless Media
Center Extender**

VoWiFi

**Digital
Camera**

**Wireless
Printer**



Multimedia For Couch Potatoes

Set Up A Wireless Media Center Extender

Windows Media Center is like an operating system within an operating system. It is included with Windows XP Media Center Edition, Windows Vista Home Premium, and Windows Vista Ultimate, and when used in Full-screen mode, it takes over your entire PC, providing a slick interface for accessing music, video, pictures, and other multimedia stored on the computer's hard drive.

Media Center provides a simple and convenient way to access multimedia, but if you want to access all of that content in your living room, the PC must be connected to your HDTV (high-definition television) and surround-sound system. If money is no object, you can simply buy an extra PC with Media Center installed and attach it to your existing home theater, but then you have another bulky, potentially noisy piece of equipment to deal with. And, you must also copy all of your multimedia files to that machine.

Media Center Extenders solve the problem neatly and relatively inexpensively. These devices generally don't have any permanent storage, which cuts down on their weight, size, noise level, and power consumption compared to a PC. Instead, they communicate with the copy of Media Center installed on a computer, access multimedia stored on that computer, and remotely display the resulting video output on your HDTV or playback music over your surround-sound system. All of the data is transmitted to the Media Center Extender via your home network, which cuts down on cable clutter when done wirelessly and makes installation very convenient.

Until recently, the best way to add a Media Center Extender to your home-theater setup was with a Microsoft Xbox 360 video game console, which has that functionality built-in. While the Xbox 360 is still a versatile and powerful Media Center Extender, there are now more standalone Media Center Extenders on the market, plus a few that should be released by the time you read this article. This

article focuses on wireless models, but a few wired models exist that are ideal if you plan to mainly use the Extender to output high-definition video signals.

D-Link DSM-750 Wireless HD Media Extender
\$329.99 | www.dlink.com

The DSM-750 supports the fastest wireless standards and the most advanced audio and video outputs so that you can enjoy anything from stereo music to 1080p high-definition video delivered from your PC to your living room. If you don't have a Media Center PC, this device also supports D-Link's proprietary Media-Lounge technology, which lets you stream multimedia to a home theater from any WinXP PC.

HP MediaSmart 1080p LCD HDTVs
\$1,899.99 (42-inch); \$2,399.99 (47-inch)
www.hp.com

OK, so that's a nice-looking HDTV, but where's the Media Center Extender? It's built-in, meaning this product not only blends seamlessly into any home-theater system, but it's also easier to install and configure than most Media Center Extenders.

Linksys Media Center Extenders
\$299.99 (DMA2100); \$349.99 (DMA2200)
www.linksys.com

The DMA2100 is a tiny, silent Extender with integrated wireless



HDMI (High-Definition Multimedia Interface) cables, such as this one, carry both digital video and audio signals and are highly recommended if you plan to watch high-definition video.

technology and an assortment of audio and video outputs that allows for everything up to 1080p high-definition video output. The DMA2200 is bigger but packs in even more features, including a TOSLINK (Toshiba Link) optical digital audio output port, an extra antenna, and an integrated DVD player that upscales standard-definition discs to HD.

Set Up A Wireless Media Center Extender

Installing a wireless Media Center Extender is fairly easy, but there are a few things to bear in mind. This article assumes you already have a wireless home network and that you know the administrator password, SSID (Service Set Identifier), wireless channel, security settings, and any other settings you established when setting up the router. If you don't remember these things, access your router using your Web browser and write them down (often, you can enter 192.168.0.1 in your Web browser's Address bar and press ENTER to access the router settings).

This article details the setup of a Linksys DMA2100 Media Center Extender, which has integrated wireless networking capabilities, but your hardware may need an external wireless NIC (network interface card) or wireless bridge to access the wireless network. Check the documentation that came with your hardware to see what it requires to take advantage of your wireless network and how to configure the necessary hardware.

Step 1: Gather Cables

The DMA2100 has many audio and video outputs on the back, but we only want to use the best mix for maximum playback quality. This hardware can handle high-definition video, so we want to avoid video connections that are incapable of passing an HD signal to the HDTV. That eliminates the

yellow composite video (also called RCA) port and the black S-Video (Separate-Video) port. The device comes with red, blue, and green component video cables, which can carry HD video signals, but we're going to use the black HDMI (High-Definition Multimedia Interface) port, which is all-digital and capable of outputting both HD video and surround-sound audio signals using the same cable.

The DMA2100 doesn't come with an HDMI cable, so we purchased a 6-foot HDMI cable from Monoprice (www.monoprice.com). If your home theater doesn't have HDMI inputs, use component cables if possible.

Although we're using HDMI to pass both video and audio to a receiver, you may prefer to use a separate cable to handle the audio signal. In this case, we recommend using either TOSLINK optical cable or digital coaxial cable if those

outputs are available on your Media Center Extender and those inputs are available on your home theater's audio hardware.

If your Media Center Extender requires an external wireless networking device, you may also need a short (3 feet should suffice) Cat 5 (Category 5) or higher Ethernet cable or a USB cable, depending on your hardware.

Step 2: Set Up The Hardware

The DMA2100 comes with two antennas that must be screwed onto the two posts on the back of the device. Connect the audio and video cables you rounded up in the previous step to the back of the Wireless Media Extender and then connect them to the back of the HDTV, receiver, or other

Windows Media Center comes with a wizard to guide you through the process of adding an Extender if your Extender is not automatically detected.



The Apple Alternative

Windows Media Center and its Extenders aren't the only game in town. Apple has also entered the streaming media market with its Apple TV (\$229 and up; www.apple.com). This diminutive box connects to Apple iTunes to stream music, video, pictures, and other multimedia that is stored on your PC or streamed from sites such as Flickr and YouTube. You can also rent movies—even

HD (high-definition) movies—online and stream them directly to your home theater.



Apple TV differs immensely from Windows Media Extenders in that it packs a 40GB or larger

hard drive (depending on the configuration). This lets you preload content directly to the device so that the strength and quality of your wireless network connection isn't important, and it is especially helpful for playing data-heavy content such as HD movies. All this, plus a lower price and the ability to work with any operating system that supports iTunes, makes Apple TV a compelling alternative to Windows Media Center Extenders. ■

equipment that will display or play the multimedia. If you need to connect an external wireless networking device to the Media Center Extender, do so now using the Ethernet or USB cable. Connect the power cord to the Media Center Extender, plug it in to an electrical outlet, and then turn on the Extender if there is a switch to do so.

Be sure to place the Media Center Extender in a location where it is visible from where you will control it. Many of these devices use infrared remote controls that require line of sight for operation.

Step 3: Configure The Media Center Extender

Turn on your television and select the input that corresponds to the cables you attached in the previous step. Do the same thing for your receiver if you connected cables to it, as well. A setup menu should appear on the television that may vary depending on your Media Center Extender's make and model. For the DMA2100, use the supplied remote control to select Next, press OK, select the Menu Language option you wish to use, press OK, and then select the Display Connection you wish to use based on the type of cable you attached in the previous step. Note that if you used the component cables but don't plan to display HD signals, you should select Component SD. If you used component cables and do plan to display HD video, select Component HD. Press OK and select a screen format. Select Next and press OK.

If you connected the device using RCA stereo cables (or want it to just output 2-channel stereo using a different type of audio connection), select Stereo. If you used HDMI, digital coaxial, or TOSLINK and want to enable surround-sound output, select Surround. Select Next and press OK.

On the next screen, select the type of network you are using. In this case, select Wireless, press OK, choose the type of wireless security your router uses, press OK, and use the on-screen

Wireless Media Center Extenders often have two or more antennas plus a variety of audio and video output jacks.



keyboard to enter the encryption password you established when you installed your router. Select Next, press OK, select Automatically, select Next, and press OK. An eight-digit setup key should appear. Write it down, leave everything as is, and go to the Windows Media Center PC.

Step 4: Configure The PC

If your Media Center Extender came with software, install it now according to the provided instructions. For the DMA2100, insert the included CD-ROM into the computer's CD or DVD drive and follow the on-screen instructions.

The Media Center Extender should be discovered automatically. If not, open Media Center on the PC, use the Up or Down arrow to highlight Tasks, and select Settings. Click Extender,

click Add Extender, and click Next. You should see a Welcome screen; click Next to continue. Enter the code you wrote down earlier and click Next. Click Yes, click Next, follow any optional instructions that may appear, and click Finish to associate the Extender with the Media Center PC.

Step 5: Play Or Display Media

Once the PC recognizes the new device, return to the Media Center Extender and use the provided remote control to navigate through the Media Center menu. Use the entries to play content stored on the PC or stream content from the Internet to your home theater—just as you would if you were sitting at your Media Center PC.

Dealing With Glitches

Going wireless offers unparalleled convenience, but at the price of performance. No wireless technology can compete with a wired Ethernet connection in terms of raw speed and—more importantly—connection reliability. Streaming multimedia in general and streaming high-definition video in particular require an utterly reliable connection between the Media Extender and the Media Center PC to deliver smooth, uninterrupted playback. You can increase the odds of a reliable wireless connection by purchasing all the same brand of networking equipment and making sure it uses exactly the same wireless technology. ■

BY TRACY BAKER



Even though the orange digital coaxial audio output has only one jack compared to two for the red and white RCA audio outputs, the former can output digital surround-sound, while the latter is limited to 2-channel stereo audio output.

Unwire Your Peripherals

Print, Scan & Transfer With Wireless USB



From mice and keyboards to printers and external storage devices, USB is the most popular connection type for computer peripherals. Consider how many devices you regularly connect to your PC via USB and then think about the cords you'd eliminate if all those devices connected wirelessly. With wireless USB hubs and laptops embedded with Wireless USB connectivity already on the market, a cordless future is closer than you may think. We'll cover the technology Wireless USB uses and its advantages, and then we'll briefly walk you through the setup of a wireless USB hub.

Unwiring USB

Wireless USB is based on UWB (Ultra Wideband) technology, which uses radio waves for data transmission over short distances. Wireless USB is capable of communicating at up to 480Mbps (megabits per second)—equaling the speed of wired USB. Transfer speeds for Wireless USB become slower at greater distances, and its limit is around 30 feet. UWB also can utilize a wide range of radio frequencies, so it's the ideal method to avoid interference with other wireless transmissions.

There are a number of manufacturers that already offer wireless USB hubs and adapters. Besides reducing the number of wires, a wireless USB hub also allows any computer with

Wireless USB technology to access the peripherals connected to the wireless USB hub.

Setting Up A Wireless USB Hub

A wireless USB kit, such as the Iogear Wireless USB Hub and Adapter (\$199.95; www.iogear.com), is the most convenient way to create a wireless USB setup. A wireless USB kit consists of a wireless USB dongle that attaches to a free USB port on your PC; a USB hub that your peripherals connect to; and software that allows the adapter and hub to communicate.

The kit's installation software should include an application that manages the pairing of the hub and adapter. To set up your wireless USB hub, you'll need to install the drivers for the hub and adapter. Then, use the manufacturer's

pairing application to link your adapter and hub. Connect your USB peripherals to the wireless USB hub and open Computer (My Computer in Windows XP) to access your wireless peripherals.

A Bright Future

Lenovo, Dell, and Toshiba have begun offering Wireless USB technology in some laptops, and when Wireless USB is regularly integrated in both PCs and peripherals, you'll no longer need to worry about connecting USB cables, wireless USB hubs, and wireless USB adapters. ■

BY NATHAN LAKE

USB vs. Bluetooth

We asked two experts—David Leeper, chief technologist for Ultra Wideband Networking Operation at Intel, and a group of experts at Lenovo for their opinions on Wireless USB and Bluetooth.

Smart Computing: Do you think that Wireless USB will replace Bluetooth?

Leeper: Wireless USB is unlikely to replace Bluetooth for wireless headsets, keyboards, mice, and other applications where low transfer speeds and very low power consumption are needed. The strength of

WUSB will be for applications requiring higher data transfer speeds.

Lenovo: Wireless USB and Bluetooth should coexist for the foreseeable future. They address different usage models; Bluetooth for low-power, low-bandwidth scenarios, and UWB for devices that require higher bandwidth and more power.

Smart Computing: Which standard is better for wireless transmission?

Leeper: The answer depends entirely on the

application, because WUSB and Bluetooth have been optimized for different applications.

Lenovo: These two technologies currently address different usage cases. Bluetooth is very strong in wireless audio, mobile phones, mice, and keyboards. But, it does not have enough bandwidth for things like streaming video and transferring large files. Wireless USB has high throughput to enable your wired USB devices to become wireless. ■



Wireless Printers

When You Must Share, Wireless Is The Way

Connecting one computer to one printer is easy, but when you need to share a printer among several computers, things become more difficult. You can use Windows' built-in networking tools to share a printer connected to a PC, but you'll need to leave the host PC on for other computers to have access to the printer. Printers that have integrated Wi-Fi capabilities eliminate the need for the printer to be shared through a PC and also give you the freedom to locate the printer in a location that's mutually beneficial for everyone. We'll cover a few other advantages wireless printers offer and walk you through the process of setting up a wireless printer on your home network.

Benefits Of A Wireless Printer

When sharing a traditional printer, the computer connected to the printer performs the actual receiving and

translation of commands other computers send to the printer, which is why the host PC must be left on. Wireless printers have a built-in wireless print server that allows the printer to communicate with PCs over your home network's Wi-Fi. If you'd like to add wireless connectivity to an existing printer, you can attach a wireless print server to update your otherwise functional printer. Check out our "Wireless Print Servers" sidebar if you'd like to read more about print servers. Whether the wireless connectivity is embedded or external, you'll be able to locate that printer anywhere within range of your Wi-Fi network, because you won't need a wired connection to either a PC or your wireless router.

A wireless printer also lets you avoid locating the shared printer in a room that is sometimes locked, such as an office, or a room where privacy is important, such as a study or bedroom. For instance, a mutually beneficial location may be important if you have a teenager who prints homework late at night or in a small-business setting with only one workgroup printer. Printers with wireless connectivity also come in handy if you move the printer between rooms, such as for a big print job where it would be helpful to have the printer next to your PC, because you can relocate the printer without reconfiguring the network settings on a host computer. If

you currently leave a PC running to share a printer, a wireless printer may save you both power and money; you'll reduce the wear on your PC, and most printers feature power conservation modes to turn off after a period of inactivity, so you'll waste less electricity.

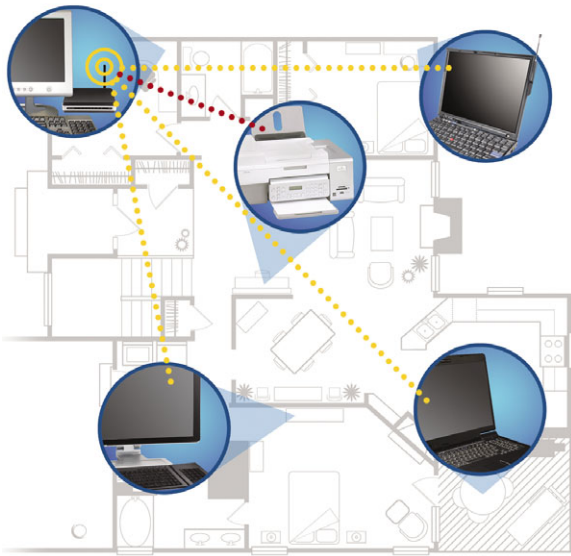
Set Up Your Wireless Printer

Most wireless printers and print servers include software that partially automates the setup process. In our example, we'll set up the Brother HL-2170W (\$149.99; www.brother.com), a monochrome laser printer that's compatible with 802.11b/g wireless routers, via Brother's step-by-step installation utility. Installation processes vary by manufacturer, but most wireless printer configuration utilities feature processes similar to Brother's configuration software.

Before you begin, we suggest that you write down the settings for your wireless network, including the SSID (Service Set Identifier), which is the network name your wireless router is configured to broadcast, as well as the type of wireless encryption and encryption key your network uses. You can locate your router's security settings by visiting the Web site listed in your wireless router's users manual. From the Web interface, you'll be able to see the SSID; the authentication method, such as Open, Shared Key, or Auto; the encryption mode, such as WEP (Wired Equivalency Privacy), WPA (Wi-Fi Protected Access), WPA2, or WPA-PSK (Wi-Fi Protected Access Pre-Shared Key); and the encryption key. Write



The Brother HL-2170W is a compact laser printer that features built-in wireless connectivity.



Wireless printers communicate with your wireless router and allow any computer on the wireless network to print to the printer.

down this information, because you'll need to enter it later in the process.

To start, place the printer next to your wireless router, plug in the power cable, and connect an Ethernet cable between the router and the Brother HL-2170W. Note that the Ethernet cable is only a temporary connection to let you configure the wireless printer from a computer on your home network. Next, turn on the printer and insert the Brother configuration CD in your PC. If you have AutoPlay enabled, Windows will open Brother's installation utility. Otherwise, open Windows Explorer, double-click the disc drive with the installation CD, and click Start.exe.

Next, choose your preferred language, select Install Printer Driver, and

click Wireless Network Users. If you use Windows Vista and have User Account Control enabled, you'll need to click Allow at the pop-up window. Select Wireless Setup And Driver Install and click Next. At the Setting Up Wireless window, you can select Step By Step Install or Automatic Install. If your wireless router supports Wi-Fi Protected Setup, Secure Easy Setup, or AirStation One-Touch Secure System, you can choose the Automatic

Install option and press a button on the Brother HL-2170W and your wireless router to automatically detect and configure the printer. Otherwise, select Step By Step Install and click Next.

At the following window, select the With Cable radio button, select Next, and click Next again. The Available Wireless Devices window lists the various devices connected to your router; make certain you choose the BRNxxxxxxxxxxx option, which represents the Brother HL-2170W, and click Next. Brother's configuration software will then search for the wireless networks in your area, which are displayed by the SSID. If you've configured your wireless router not to broadcast an SSID, click the Add

button, and you can manually add the SSID to the on-screen list. Select the SSID for your wireless router and click Next. At the Authentication Method And Encryption Mode window, enter an authentication method and encryption mode from the drop-down menus that match the settings you wrote down. Next, enter the correct encryption key in Network Key and Confirm Network Key fields.

Once you select and enter all your network security settings, click Next, disconnect the Ethernet cable from your router and wireless printer, and click Next again. At the License Agreement window, select Yes, choose Standard Installation, and click Next. Select the Search The Network For Devices And Choose From A List Of Discovered Devices radio button. Select the Brother HL-2170W from the list, click Next, and then click Finish. To allow other computers to access the printer, insert the Brother software CD, select Install Printer Driver, choose the Driver Install Only radio button, and click Next.

Share The Wealth

Once the wireless printer is set up, choose a printer location that's convenient for everyone. Whether it's the end of a hallway or a common room, you'll find that sharing the printer is a lot easier with a wireless printer compared to their wired siblings. ■

BY NATHAN LAKE

Wireless Print Servers

If you're happy with your current printer, you don't need to replace the otherwise functional printer with a wireless model just to reap the unwired benefits—a wireless print server will do the job nicely. A wireless print server connects to your printer via USB (a few models also support older parallel ports) and communicates with your wireless router over Wi-Fi. Most manufacturers of network products, including Buffalo Technologies, D-Link, Linksys, Netgear, and Trendnet, offer wireless print servers.

We found that most current wireless print servers use the 802.11g wireless standard, which is typically

backward-compatible with 802.11b. Check which wireless standards your router supports before purchasing the add-on wireless server. Some print servers, such as Netgear's WGPS606 (\$84.99; www.netgear.com), can function as a print server for multiple printers—ideal if you want to adapt both a photo printer and laser printer with wireless connectivity. Note that most print servers don't support a multifunction printer's faxing, scanning, and copying functions, and if you want wireless access to the all-in-one features, look for a print server with multifunction support, such as the Linksys WPSM54G (\$119.99; www.linksys.com). ■

Wireless Watching

Turbocharge Your Viewing Experience With Wireless TVs



As the popularity of wireless home networks continues to soar, manufacturers have their sights set squarely on certain devices that can take advantage of the content stored on those networks. Naturally, televisions are perfect candidates for enjoying the wide range of videos and pictures now filling up home PCs' hard drives, and a relatively new invention called the wireless TV is making that connection easier than ever.

For many consumers, connecting their PCs to their televisions using cables isn't terribly convenient, usually because the devices are located in separate rooms. Further, there can be a learning curve when figuring out how to use software not originally designed for streaming content to televisions. However, wireless TVs integrate wireless technology to let users access networked PCs, regardless of the devices' locations in the home.

Additionally, wireless TVs feature built-in software that makes the sharing process an absolute snap. With a wireless TV, you'll be able to watch videos, view pictures, and listen to MP3s you've saved on your hard drive. You'll also be able to download movies from services such as CinemaNow (www.cinemanow.com) and watch them instantly on your wireless TV.

Because it's still an emerging technology, the market for wireless TVs is small, limited to just a handful of manufacturers with products available for sale as of press time. The venerable

Wi-Fi standard is making an appearance in these early iterations; for example, HP's line of MediaSmart LCD TVs use integrated 802.11a/b/g/n for wireless networking and include a robust software interface that allows easy access to videos, photos, and other content stored on networked PCs. But not all wireless TVs are built the same.

Westinghouse recently announced a Wireless HDMI (High-Definition Multimedia Interface) TV, which will connect to DVRs (digital video recorders), Blu-ray Disc players, and other devices to stream high-quality

standard designed specifically for transmitting high-quality video/audio streams (for information on HDMI, see "What's New With Wireless?" on page 65), and while it's already available on many products for use with cables, the wireless variant is new.

Get Started

If you've ever connected a device other than a PC to your wireless network, you'll discover that the process for connecting a wireless TV is quite similar. In fact, the experience doesn't vary much from that of adding a PC itself to your network, but there are some important differences. In this article, we'll explain how to connect an HP MediaSmart LCD wireless TV to your network, but before you configure your TV to access the network, it's a good idea to get the basics down.

Be sure your television is connected to a TV source (cable or satellite) and an audio source if you're using external audio and that you can successfully watch TV content with no problems. Also, because streamed content often doesn't have great image quality, you should perform a full calibration on your television to ensure its settings are configured for optimal performance. (If you're unsure how to calibrate your LCD TV, you can find easy-to-understand tutorials online.)

On the network side, make sure the computer from which you'll be streaming media is using either



Before configuring your MediaSmart TV to access the network, you should write down or memorize your network's SSID (Service Set Identifier), because you'll need to enter it in the television's setup wizard.

video and audio content directly to the TV. Whereas the HP TVs use Wi-Fi to access digital content, the Westinghouse TV will use Pulse-Link's CWave UWB (Ultra Wideband) Wireless HDMI technology. HDMI is a

Microsoft Windows Vista or Windows XP with Service Pack 2. Also, you'll need your wireless router's SSID (Service Set Identifier, which is the wireless network's name), along with your network's security type and password—assuming you're using WEP (Wired Equivalency Privacy) or WPA (Wi-Fi Protected Access) security.

Make The Connection

Now, let's step through the setup process for connecting the MediaSmart TV to your wireless network. After turning on the TV using the remote control, press the Media button, which will launch a network configuration wizard (after the wizard completes the setup, this button will launch the digital media screen in the future).

You'll be prompted to select a language, and then you'll see a Welcome screen that describes the steps you'll need to complete the setup, including the network setup and the TV setup. Press the arrow button on the remote to select Next on the screen and press OK on the remote to continue. Next, select Connect To A Wireless Network and press OK. On the following screen, select Manual Configuration and press OK.

Use the on-screen keyboard to enter your SSID (or network name), select Next, and press OK. When the TV finds your network, you'll receive a prompt

to enter your WEP key or WPA passphrase. Enter it (again using the on-screen keyboard), select Next, and press OK.

Your TV should connect fully to the network, displaying a screen that indicates you are successfully connected. Select Next and press OK. The PC Setup screen will now appear, but don't select Next on this screen—just leave your TV on with this screen showing on the display. You'll now need to install the software included on the Installation CD onto your PC.

After inserting the Installation CD into your PC's optical drive, you'll be greeted with the Welcome screen. Click the appropriate language button to begin the installation and follow the instructions until the installation is complete. When a confirmation screen

appears indicating that the setup is complete, click Exit.

Streaming Time

Now that your PC is ready to accommodate streaming to your TV, return to the TV, select Next on the still-showing PC Setup screen, and press OK. The TV will now search for authorized servers on the network. You should now see a Setup Complete screen, which will show the number of available media servers in the bottom-right corner of the screen. Select Finish and press OK.

Now, the Settings Software Update screen will appear. With Check For Software Update selected, press the Right arrow button on the remote to instruct the program to search for updates. Follow the on-screen instructions if an update is found or select Finish and press OK if the screen indicates that the current software is the newest version.

Finally, the main digital media menu will appear, allowing you to begin accessing media stored on your wireless network. However, before you begin, you'll likely need to configure sharing in Windows Media Player to choose folders that can be shared over the network. HP includes detailed instructions for this configuration process at www.hp.com. ■



Wireless TVs, such as this HP MediaSmart, feature integrated wireless technology that lets users access digital media content stored on their PCs.

BY CHRISTIAN PERRY

Wireless Doesn't Come Cheap

As it generally goes with new, fancy technology, wireless TVs don't come cheap. In fact, you'll pay anywhere from several hundred dollars above to more than double the price of a comparably sized television for the luxury of connecting your TV to your wireless network. For example, the HP SL4278N 42-inch MediaSmart wireless LCD TV retails at \$1,899.99. By contrast, the HP LC4276N 42-inch LCD TV sells for \$1,499.99. The 47-inch SL4778N MediaSmart TV retails at \$2,399.99, while the 47-inch HP LC4776N sells for \$1,899.99.

Larger wireless models are also available, such as Samsung's 58-inch FP-T5894 wireless plasma HDTV (high-definition

television), which retails at nearly \$4,000. By contrast, the nonwireless Samsung 58-inch FP-T5884 retails at about \$2,500.

Yet with some smart shopping, it could be possible to obtain a similarly sized—or even larger—monitor with equal or better display quality and then add a wireless media adapter (as discussed in the April 2008 issue of *Smart Computing*) to the equation, all for less money than purchasing a single wireless television. For pure convenience, however, an all-in-one wireless television is tough to beat. ■



Pick Up The Phone

Make The Call With VoWiFi

By now, most computer users have heard of VoIP (Voice over Internet Protocol), which lets you make traditional phone calls over broadband Internet connections, and more and more of us are adopting the solution for our homes. In January 2007, the Telecommunications Industry Association announced it expects broadband-based phone technology to power 34% of all U.S. residential phone lines by 2010 (25.5 million subscribers), up from 10% (9.5 million subscribers) in 2006.

Even more importantly for those of us who prefer to spend our time untethered, VoWiFi (Voice over Wireless Fidelity, or Wi-Fi) is on the move, as well. With VoWiFi, you don't need to plug a phone into your modem—you can make telephone calls over Wi-Fi connections in much the same way you make mobile calls over wireless cellular networks. With ABI Research predicting a compound annual growth rate of 93% for VoWiFi access points through 2012, the future of this technology looks bright, indeed.

As a final benefit, there are even devices that let you make phone calls over Wi-Fi or cellular, with the phone being able to seamlessly hand off from one connection to the other. (These phones are called FMC—fixed-mobile

convergence—devices.) That means you can start a cellular call in your car and walk into your home without dropping the connection, even if you normally have no cellular service at home. As soon as the signal weakens, your Wi-Fi network will pick it up. And when you make a call from home—or at any hotspot within the provider's network—you won't use a single one of your precious minutes. Sound too good to be true? It's not. Read on.

Why Wi-Fi?

If you already have a wireless network, taking your telephony wireless can be an easy, enjoyable, and cost-effective venture. Depending on the provider, VoWiFi can be significantly less expensive than traditional telephone service. For instance, Skype (whose VoIP network carries 95% of all traffic globally, according to an Ipoque study) lets you send and receive free

calls to and from other Skype users worldwide. Calling or receiving calls from non-Skype landlines or mobile phones is inexpensive, as well. To set up a service such as Skype to run with your wireless home network, you only need a compatible phone from a company such as Belkin (www.belkin.com), D-Link (www.dlink.com), or Netgear (www.netgear.com). (If you download the VoIP software, you can also use a cordless phone connected to your PC, but this doesn't require a Wi-Fi network.)

These phones cost \$100 or more, but they offer an added bonus: With them, you can make calls over any Wi-Fi network (open or secured) to which you can connect. Even more importantly, if you travel a lot, charges relate to where your number is based and not where you are at the time of the call. For example, if you purchase a New York-based personal call-in number (as little as \$5 a month with Skype),



Belkin's Wi-Fi Phone for Skype (\$179.99; www.belkin.com) is preconfigured to work with Boingo hotspots.

anyone calling that number from New York pays only the local toll—even if you are at a Wi-Fi hotspot in Timbuktu.

Of course, having to find a Wi-Fi hotspot to make a call would quickly become tiresome for most of us, which is why many experts have announced that mobile VoWiFi isn't quite ready for prime time. Nevertheless, it is a viable alternative if you want to cut call costs at home, especially if you make a lot of long-distance calls. If you want to try it out, be sure to purchase a Wi-Fi phone if you want to use Skype with Wi-Fi; a number of cordless handsets also support Skype, but they use DECT (Digital Enhanced Cordless Telecommunications) to connect to Skype software installed on your PC.

Of course, Skype isn't the only service for which you can purchase a Wi-Fi phone. If you already have VoIP service, check with the provider to see if it offers one. D-Link makes a phone—the D-Link DPH-540/541—that the company asserts will work with many providers. At \$219.99, it's a bit pricey, although you can find it for less online.

Before you spend big bucks on a VoWiFi phone, consider that these phones are only equipped to replace standard handsets. They often lack

many of the perks you gain with cell phones or smartphones, such as Bluetooth, a camera, and personal information managers. They also generally have poor battery life compared to cell phones. Furthermore, unless your VoIP provider explicitly guarantees it (Skype does not), you will not have 911 locator service (the ability for a 911 operator to pinpoint your address without you telling them) with these phones.

The Best Of Both Worlds

If you are a mobile phone customer, and especially if you use T-Mobile (www.t-mobile.com), another, potentially more cost-effective VoWiFi option is at your command. Last year, T-Mobile unveiled a new service, HotSpot @Home (www.theonlyphoneyouneed.com), which enables users to make calls on specific T-Mobile cellular devices over their home Wi-Fi networks. HotSpot @Home (which T-Mobile says will likely be renamed Unlimited HotSpot Calling by the time you read this) was the first consumer FMC solution in the United States. A few European companies, including British Telecom, Orange, and TeliaSonera, as well as Cincinnati Bell in the United States, also offer consumer FMC service.

With Unlimited HotSpot Calling, T-Mobile will route to an available Wi-Fi connection the calls you start on a cellular connection, and vice versa, with little to no disruption. You can also use the service to make or receive calls on your home network (or any Wi-Fi network to which you have authorized access), as well as at any of T-Mobile's 45,000 international hotspot locations (nearly 9,000 in the



The D-Link DPH-541 VoWiFi phone looks like a traditional clamshell mobile phone and works with several VoIP (Voice over Internet Protocol) providers.

United States). The standard service costs \$9.99 per month with a rate plan of \$39.99 or higher (data access is extra). Calls that originate on the Wi-Fi network are free, no matter where in the United States you call—even if you roam out of Wi-Fi range and onto a cellular network while talking. Calls that start on a cellular network and move to Wi-Fi, however, are billed as cellular calls for the entire call. (If you've been on the cellular network and you roam onto your home Wi-Fi network, hang up and dial the call again to save those minutes.)

You may be wondering how these phones can accomplish this miracle, while your Wi-Fi-enabled smartphone cannot. FMC devices use a special technology called UMA (Unlicensed Mobile Access). With UMA incorporated into your

phone, the device automatically queries available Wi-Fi networks to determine if it can be authenticated on the network. If there is a match, the phone hands the call off to the Wi-Fi network. When you start a call within range of a Wi-Fi network, the phone also negotiates the connection, and when you leave network coverage, the call passes back to cellular.

T-Mobile initially offered only two FMC models: the Nokia 6086 and the Samsung t409. At press time, its site also listed the BlackBerry Curve. However, a T-Mobile spokesperson indicated that by May, the company would add the Samsung Katalyst and the BlackBerry Pearl to its FMC lineup.

Quick & Easy

Setting up Unlimited HotSpot Calling is about as simple as it gets.



The Nokia 6086 is an inexpensive clamshell-style phone with which we had excellent results.

We tested it with a D-Link DIR-655 Xtreme Wireless Router (\$149.99) and the Nokia 6086, an approved T-Mobile FMC phone.

Step 1

With the Wi-Fi network broadcasting, turn the Wi-Fi radio on (for the 6086, select Menu, Settings, Wi-Fi, Wi-Fi Radio, and On).

Step 2

Open Available Networks (on the 6086, select Menu, Settings, Wi-Fi, Available Networks), and T-Mobile will “see” the network.

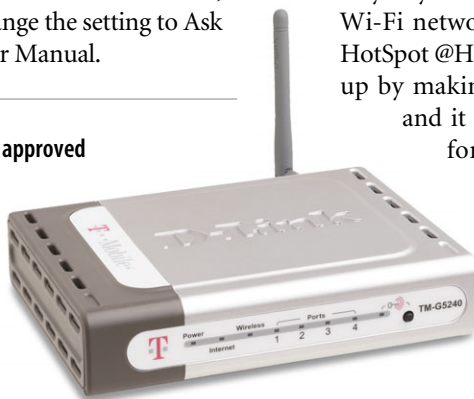
Step 3

Scroll to the network you want. Select Connect, enter the network’s key (called a passphrase on the 6086), and the phone will make the connection.

Step 4

Save the connection (the Nokia 6086 prompted us to do this) and save (or optionally change) the profile name (the default was the name of our network, so we left it unchanged). FMC phones generally save connections under the Automatic setting, which means they will connect to the network without user intervention if you roam into range. To check the settings under which the 6086 saved the network, we navigated to Saved Networks (select Menu, Settings, Wi-Fi, and Saved Networks) and selected Options and then Conn. Setting. Using this setting is necessary to provide seamless handoff. If you do not want your phone to automatically connect to a network, you should change the setting to Ask First/Prompt or Manual.

One of T-Mobile’s approved routers is a D-Link 802.11g model (free when you sign up for service).



At this point, the 6086 was ready to connect automatically to the network. To test it, we disconnected and then made a call. Within seconds, the 6086 reconnected to the Wi-Fi network and placed the call.

This technology is still fairly young, and when HotSpot @Home first debuted, numerous bloggers and forum users commented that the technology was not 100% perfect. However, in our tests, the phone transitioned from cellular to Wi-Fi and back so seamlessly that we had a hard time ensuring we were actually moving from one network to the next. We discovered the phone’s View Details function (which we accessed by locating the network in Available Networks, pressing Options, and then View Details). Using this, we could determine when we were and were not connected.

The phone lost the Wi-Fi signal midcall on one occasion while a tester was wandering around in the street outside the office, but it didn’t drop the connection. It flipped from cellular to Wi-Fi, to cellular, and back to Wi-Fi again without missing a beat. Call quality was as good on Wi-Fi as it was on cellular. We were impressed.

The Final Call

Given that users use approximately 41% of cellular minutes at home (as per T-Mobile), we cannot imagine why any user of that carrier with a Wi-Fi network wouldn’t want the HotSpot @Home service. We signed up by making a quick phone call, and it took only a few hours for the service to be active. T-Mobile confirmed our home address to ensure we would have 911 locator service, and we were off and running.

The sexy, gold BlackBerry Curve is a delightful smartphone for FMC (fixed-mobile convergence) that also offers all the BlackBerry bells and whistles.

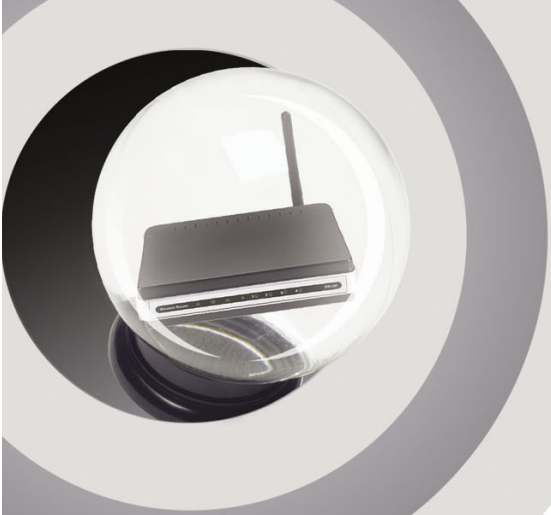


Other carriers will probably offer similar services eventually, and although Verizon, AT&T, and Sprint were involved in or offering enterprise-level FMC solutions, T-Mobile still owned the consumer FMC market, as of press time.

The only problem we found with the Nokia 6086, which you’ll experience with any FMC phone, is battery life. Keeping the Wi-Fi antenna on all the time (required for automatic location of networks) substantially reduces battery life. That said, if you know you won’t be using the phone for VoWiFi, turn the antenna off.

At press time, T-Mobile was also trialing a VoIP service, HotSpot @Home Talk Forever Home Phone. With it, a user ports his existing home phone number to T-Mobile and plugs his traditional touchtone telephones (corded or cordless) into the T-Mobile @Home Wireless Router with Home Phone Connection. He then enjoys unlimited nationwide calling—both local and long-distance—plus three-way conference calling, voice-mail, call forwarding, call waiting, and call holding. The service costs \$10 per month with a \$39.99 per month or higher rate plan (\$49.99 for Family Plan users). Pair it with HotSpot @Home, and for \$19.99, multiple family members can talk to their hearts’ content. ■

BY JENNIFER FARWELL



What's Next With Wireless?

The Next Frontier In Wireless Home Media

Wireless technology has freed us from the hassles of wiring—extending our reach at the same time—in many areas of electronics. However, one of the areas wireless has largely been unable to reach is the back of our entertainment centers, where the tangle of wires can be as visually appealing as a bed of rattlesnakes.

Companies have successfully tackled this challenge, devising such solutions as HDMI (High-Definition Multimedia Interface). HDMI wraps 19 wires into a single sleeve resembling an Ethernet cable with a USB-style connector. HDMI enables the cable to transmit up to 5Gbps (gigabits per second) of data, more than enough to carry uncompressed video and up to eight channels of audio.

However, current wireless solutions don't offer the data transfer capacity required for uncompressed video. For example, the maximum over-the-air capacity of Wi-Fi 802.11n, the latest Wi-Fi protocol that has yet to be ratified, is targeted at 300Mbps (megabits per second). For several years, developers have been working to find a workable wireless replacement for high-bandwidth cables.

Taming The Snakes

The answer is on the horizon, as numerous companies begin to release ultra-high-bandwidth wireless radios, chips, and devices. Two solutions—Wireless HDMI and WiHD (Wireless-HD)—are currently battling it out.

Wireless HDMI replaces the cables, although it lacks standard HDMI's

generous bandwidth capabilities. Wireless HDMI utilizes UWB (Ultra Wide-band) technology, which spreads signals across a wide spectrum of frequency bands to increase throughput over short-range distances. It supports theoretical speeds of up to 480Mbps, and it uses a new compression scheme its proponents say enable HD quality.

The core platform powering Wireless HDMI is WiMedia, a UWB standard created by the nonprofit WiMedia Alliance. The WiMedia Alliance has a lot of heavy hitters in its stable, including Microsoft, Nokia, and NEC.

WiHD, on the other hand, transmits uncompressed video and audio signals

products will become available during 2008, but at press time, none were evident. In 2007, Wireless solution-provider Amimon further muddled the waters by unveiling a chipset using its proprietary wireless HD technology, WHDI (Wireless High-Definition Interface). WHDI uses the 5GHz unlicensed band for delivery of up to 3Gbps streams over as much as 100 feet.

The fast uptake of HDMI and aggressive efforts by some manufacturers to bring Wireless HDMI devices to the market appears to give Wireless HDMI a solid lead for now. A number of companies, including Tzero Technologies and Pulse-Link, have developed Wireless HDMI chips or devices. At the January 2008 CES, Pulse-Link and Westinghouse demonstrated communication between the world's first fully integrated Wireless HDMI HDTV and a Blu-ray Disc player equipped with a Pulse-Link Wireless HDMI transmitter. Westinghouse indicates the 2008 model will be an enterprise-grade unit but says consumers should see a similar Wireless HDMI model in 2009.



Westinghouse reports that consumers should see an integrated Wireless HDMI HDTV by 2009.

over the 60GHz band, an unlicensed portion of the radio spectrum that can handle up to 5Gbps transmissions. Samsung, Sony, LG, Toshiba, and other manufacturers formed the WirelessHD Consortium to develop this standard for HD audio and video transmission.

Arrival Time

Lianne Caetano, executive director of WirelessHD, has stated that WiHD

On The Horizon

Proponents of all these wireless HD solutions say we can eventually expect to see them in HDTVs, set-top boxes, HD disc players, digital cameras, camcorders, notebooks, and other devices that can benefit from ultra-high-bandwidth data transfer. Some may require adapters to work with HDMI devices, but all should be compatible. No matter who wins the race, we will be waiting with glee at the finish line. ■

BY JENNIFER FARWELL

Browsers

Quick Studies
How-To

Download Files With Firefox 3's Download Manager

Firefox 3

Beginner

Web browsers download data all the time—each page you view is a downloaded copy of code stored on that Web site's server. Downloading other files is a little more complicated, but it's getting simpler all the time.

Mozilla Firefox 3, available in beta as of this writing, adds a few small improvements to the downloading process that makes saving files from the Internet easier than ever. A refined Download Manager provides ready access to files, quickly locates downloads, and even keeps track of downloads gone wrong. If downloading files sometimes seems a little mysterious, get to know the Firefox Downloads window.

Click & Receive

Most of the time, starting a download is a simple business: Just click the link. A file intended to be downloaded is likely coded into the Web page in such a way that merely clicking the link in the standard fashion causes those bytes to start flowing. Sometimes, you must right-click a file link, choose **Save Link As**, and then choose a location on your hard drive to save the file.

Although getting the download started is usually easy, one frequent frustration is losing track of the file after it arrives on your hard drive. Browsers might be set to save downloads into particular, obscure folders, or you might accidentally tell the browser to save to some random folder. You're not alone if you've ever downloaded a file a second time just because you gave up trying to locate the first copy.

The Firefox Download Manager dispenses with that particular problem. Before spending time hunting for a downloaded file, just open the Down-

loads window from the **Tools** menu or by pressing **CTRL-J**. The Downloads window should display all recent downloads by file name. Right-click the file in question. Choose **Open Containing Folder**, and the folder where the file resides will open on your screen. You can also simply double-click a file name right inside the Downloads window to open it.

If you've downloaded so many files that you don't immediately see the one you want, try the Downloads window's **Search** function. Type the file's name or the name of the site where you found

the file. Downloads that do not match your search disappear as you type until the correct file remains.

Custom Features

To alter options relating to Download Manager, click **Tools** and **Options**. On the **Main** tab, you'll see a section called **Downloads**. From there, you can choose whether the Download Manager appears automatically when you begin to download a file and whether it closes on its own as soon as a download is complete.

You can also choose the default location for dumping downloaded files. The default is your **Desktop** folder. If you can't stand even temporary Desktop clutter, you can change the download destination to any other folder you like. You can also click the option to always have Firefox ask you where the downloaded file should be saved each time you begin a download.

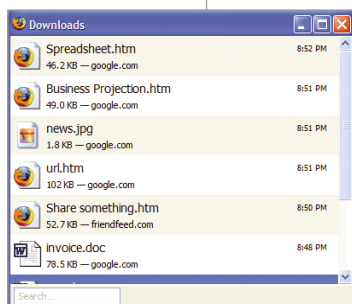
One more download-related setting to keep in mind is on the **Privacy** tab. Here, you can choose whether Firefox remembers your downloads at all. Deselect the **Remember What I've Downloaded** checkbox, and files will no longer appear in the Downloads window. If you don't want to go that far, you can always delete individual items from the list by right-clicking a download in the Downloads window and choosing **Remove From List**.

Do Over

Firefox also supports resumable downloading. That means if a long download is cut off halfway through because of a computer crash, network problems, or browser freeze, you'll be able to pick up where you left off once the problem is fixed. You can also pause the download by opening the Download Manager and clicking the **Pause** button next to the download you want to continue later.

Resumable downloading didn't always work in our tests. Sometimes a paused file would generate an error message when we tried to resume the download. However, the Downloads window will continue to list the file so that the file is not left behind. A handy **Retry** button next to the file name restarts the download from the beginning. Downloading files doesn't really get any easier. ■

BY ALAN PHELPS



Firefox 3's improved Download Manager makes it easier to find files you've collected from the Web.

Excel 2007

Quick Studies
Problem-Solver

Better Ways To Navigate Worksheets

Spreadsheet

Beginner

2007 for
WinXP/Vista

Once your worksheets outgrow the confines of what's visible in a single screen, you face the challenge of getting around efficiently. This month, we look at some common ways to overcome the hassles of finding the right information quickly and generally navigating larger worksheets.

When I scroll down a few rows or over a few columns, I lose sight of column and row headings.

Use the View tab's Freeze Panes button to keep headings in view. You can freeze just the top row, for example, so that no matter how far down you scroll, you'll still see the label telling you that column E is Lodging Expenses and column F is Dining Expenses. You also can decide to freeze just the first column or freeze panes in a custom spot. You may, for example, want to freeze *both* the first column and the top row. Click a cell below the row you want to freeze and to the right of the column you want to freeze. Then click the Freeze Panes

view of the cell's value, so if, for example, you change a number in cell D22 that feeds into the formula in cell D250 and press ENTER (and you've set up D250 in the Watch Window), you'll see D250's value change in the Watch Window.

That's great, but I want to look at a whole range of cells while I'm working on a separate range.

Then it's time for some serious picture-in-picture action. Go to the View tab and click Split to produce a crossbar above and to the left of the selected cell. The four quadrants represent separate windows you can scroll independently. (Or nearly independently; the windows beside each other scroll together vertically, and the windows that border on the top or bottom scroll together horizontally.) You can simplify the view by dragging either the vertical or horizontal bar of the quadrant off to the side and working with the remaining windows. You can adjust a quadrant's size by dragging the center of the crossbar to a new position.

Remember that these are all different views of the same worksheet. Changing a cell in one pane immediately affects any cells it's tied to, regardless of which pane you do or don't see them in. To remove the panes and return to a single-pane view, click the Split button again on the View tab.

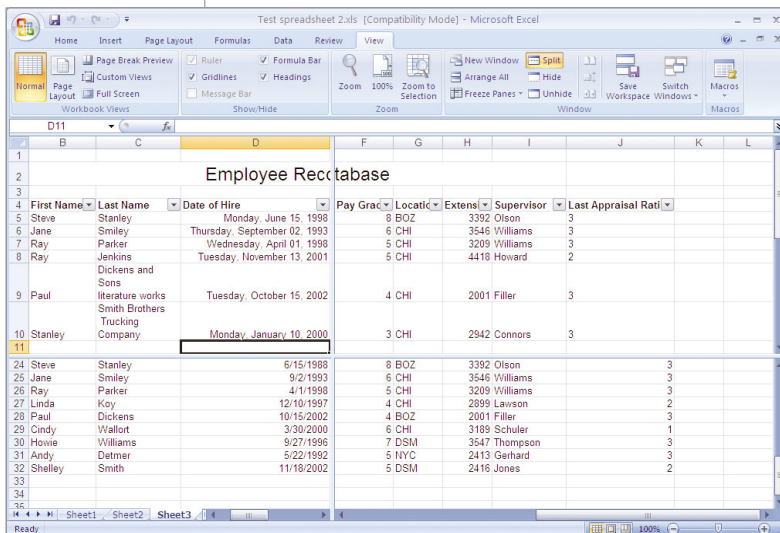
How about one more level of complexity: I need to view multiple workbooks at the same time.

Just open whichever workbooks you want to look at using the Office button's Open option. The windows stack on each other until you click Arrange All on the View tab and pick an option. You can tile the windows, arrange them vertically or horizontally, or cascade them. They all still function as separate documents that you can jump among using ALT-TAB.

When entering data all over the worksheet, I often have to return to the top or bottom of the document. What's a quick way to get there?

In addition to using the views discussed above, you can jump to the beginning and end of worksheets with key combinations. To jump to cell A1, press CTRL-HOME. To jump to the last cell in your work area, press CTRL-END. This won't necessarily take you to the last cell with data in it. It will take you the intersection of the last column with data and the last row with data (in short, the bottom-right corner of your work area). ■

BY TREVOR MEERS



If you find yourself constantly scrolling to far corners of a worksheet, try using split panes to see several areas at once.

button and Freeze Panes again. To turn off the feature, choose the Unfreeze Panes option.

Every time I update sales figures and want to check the new bottom line, I have to scroll about 30 rows down to check the cell showing the results.

Excel's Watch Window feature provides something like a TV's picture-in-picture option, letting you watch a couple of different "channels" at once. Start by clicking the Watch Window button on the Formulas tab. This opens a small window where you can keep an eye on the current value of any cells you like. Just click Add Watch and then select the proper cell. The window provides a real-time

Word 2007

Options Are Now Centralized

Word Processing

Beginner

Version 12 for
WinXP/Vista

Microsoft has improved the process of changing often-used setting by creating a central location for options in Word 2007.

To get started, click the Office button and click Word Options. A window opens with nine categories of options listed on the left. We will focus on the most commonly used options here.

Start In The Middle

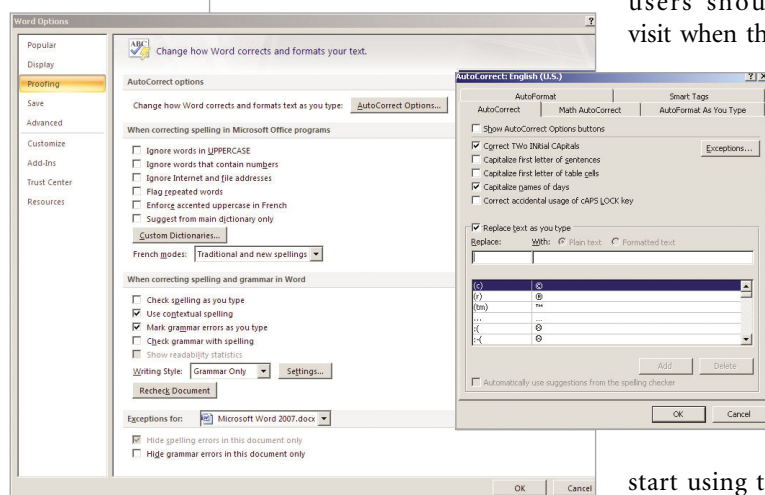
Let's check out Proofing first. Click Proofing and notice that the right-hand side of the pane contains four sections. The second section lets you set options for all of your installed Office 2007 programs.

The top section contains an AutoCorrect Options button (one of the first places Word 2007 users should visit when they

Now click the AutoCorrect tab. AutoCorrect also works as a double-edged sword. You may want the copyright symbol © to appear automatically every time you type (c), or you might want the characters to appear exactly as you type them. In the latter case, uncheck Replace Text As You Type.

You may, however, have the habit of typing "teh" instead of "the" and want AutoCorrect to continue to fix that. If so, leave the Replace Text As You Type box checked and eliminate certain automatic corrections by selecting them in the list at the bottom of the AutoCorrect tab and clicking Delete.

The third area on the right of the Proofing section contains settings for correcting spelling and grammar in Word. The Settings button lets you specify precise rules to be checked in your document, such as whether or not the next-to-last word in a series is followed by a comma.



start using the program).

AutoCorrect Options can help or hamper your productivity. For example, Word may automatically create bulleted lists when all you wanted to do was begin a paragraph with an asterisk.

Click the AutoCorrect Options button to bring up a dialog box. Unfortunately, Microsoft uses the same confusing naming conventions for the functions here as it has in the past. AutoFormat and AutoFormat As You Type are separate functions. And AutoCorrect is altogether different (it addresses things such as capitalization and spelling).

Click the AutoFormat As You Type tab. Unlike AutoFormat, which can be used to apply a group of settings to a document, AutoFormat As You Type applies changes as you go along. So it's more likely to be a source of frustration if the settings don't suit you. Check or uncheck boxes to make changes.

Popular Settings For Performance

Now that we've taken care of those pesky AutoCorrect behaviors, let's back up. Click the first category on the left side of the Word Options window, called Popular. The first two selections affect the Mini Toolbar and Live Preview. The Mini Toolbar is that semi-transparent group of text formatting functions that appears when you select text. Live Preview shows what a document will look like if you apply the formatting or style option the mouse is currently hovered over. Uncheck the boxes next to these features if you don't use them.

Save & Advanced Settings

Click Save on the left to customize how a document is saved. By default, documents are saved in Word 2007's DOCX format. The first selection in this area, Save Files In This Format, is an important one. Set this to Word 97-2003 Document (*.doc) via the drop-down menu if, for instance, your co-workers are using an earlier version of Word. This will automatically save new documents in the DOC format when you click the Office button and Save. (You can still click the Office button and Save As to save a document in a different format.)

There are more settings available in Word 2007. Do some exploring to see additional options. ■

The Word Options area is a good upgrade in Word 2007. The AutoCorrect dialog box strongly resembles what was in previous versions.

BY TOM HANCOCK

Online

Quick Studies
How-To

Keep Up With The Online Tribe At FriendFeed

FriendFeed

Intermediate

There's no end to Web sites that let you keep track of your friends' blogs, pictures, music, and seemingly their every movement throughout the day. FriendFeed, a kind of social site aggregator, aims to bring all of those updates to one spot.

FriendFeed is comparable to an RSS (Really Simple Syndication) reader with a laser focus on your contacts' online activities. It's free and well worth a try if you know more than one person who uses more than one social site. Head to www.friendfeed.com and set up an account. After entering your new ID and password, you can set FriendFeed to find contacts on Facebook or use your Web mail address book to quickly see if anyone else you know is using FriendFeed. If they aren't, that's OK—you can still subscribe to their various feeds, as described below.



FriendFeed aggregates information from a variety of social Web sites, such as blogs, photo-sharing sites, and bookmark sites.

Make Friends

Add friends to your feed by clicking the Friend Settings tab and then selecting the Find & Invite Friends link. If a contact is on FriendFeed himself, it is easy to quickly add all of his relevant feeds

at once—FriendFeed takes care of the details. Whenever a friend adds an item to one of the sites he's shared on FriendFeed, it will show up as a link on your Friends tab. Reciprocate by clicking the Me tab and then clicking the Share Something button to add your own feeds.

If your friend is not a FriendFeed user, that's OK. You can pretend by using the Imaginary Friend feature. Click Friend Settings and then choose the Imaginary link. Click Create An Imaginary Friend and enter the name of your real friend or a fake friend you'll use to keep track of one or more actual friends. Click Create and then choose the different sites that friend uses (such as Flickr, Digg, del.icio.us, etc.) and then enter the necessary screen name info.

FriendFeed is primarily designed to help you keep up with RSS feeds generated by friends and family, but it can track any other RSS feed, as

well. For instance, you might include a news feed from your favorite online newspaper or a popular blog. First, create another imaginary friend or go to the Settings screen of an existing imaginary friend. Click Friend Settings, Imaginary, and then the name of one of your pretend friends. You'll see the Update Settings box with the now-familiar list of services FriendFeed supports.

There's no option simply called "RSS Feeds," but the Blog option is basically the same thing. Click Blog and then paste any RSS feed URL into the box. You can repeat these steps to add other feeds, as well. Each friend is not limited to one "blog." You'll need to figure out the RSS address on your own for unsupported sites; usually you can find them by right-clicking the feed icon on the page you want to follow and copying the address.

Talk About It

If you regularly sign in to an RSS aggregator, such as Google Reader, Bloglines, or one of the many standalone desktop alternatives, you could be getting much of this same info through standard RSS feeds. In some ways, FriendFeed is not much different than a plain-old RSS reader.

However, it's not meant to be used that way, and a handful of features focus on the "Friend" part of the name rather than the "Feed" part. The feed items that appear on your Friends tab all have a couple of links below the main text: Comment and Like. Click the Like link, and you will be listed as someone who enjoyed that particular post. Anyone else that subscribes to that same feed will see your gesture of appreciation, making you that much closer to your virtual circle of friends.

The Comment link lets you leave a note about that post, again for all other subscribers to see. Others can comment on your comment. Sure, you could leave comments at the actual Flickr or Blogger or whatever site where the original item appeared, but bringing those comments to FriendFeed instead can potentially generate even more interaction. There's one username, one site, and one interface for discussion of many types of items. Convince enough of your friends to join the mix, and FriendFeed could be a great way to keep up on everything and everybody. ■

BY ALAN PHELPS

Roxio PhotoSuite 8

Resolve Resolution Woes

Image Processing

Intermediate

8 for
Win2000/XP

Roxio PhotoSuite 8 has some nifty editing tools for making images appear as clean and crisp as possible, but sometimes your photos have resolution issues that none of PhotoSuite's editing tools can solve. Here's some help in troubleshooting photo resolution woes.

PROBLEM: Grainy images. If your photo appears grainy, there may be a simple solution that has little to do with the resolution of the photo you've opened, especially if you know the photo was taken at a high resolution.

SOLUTION: The quality of what you see may be affected by PhotoSuite's Zoom control. The closer you zoom, the more blurred the image becomes. When looking at a high-resolution image, click the Zoom Out button, located along the icon bar at the top of the workspace, until the photo "shrinks" so that the entire image fits

in the workspace. As you zoom out, the image will become clearer.

PROBLEM: Fuzzy images. Another reason your photos may appear grainy, blurry, or fuzzy lies in your computer's settings. If your Windows display settings are too low, you won't be able to see your images in their best light.

SOLUTION: Right-click the Desktop, choose Properties, and select the Settings tab. The adjustment you can make to your display settings will depend upon your computer's video card. PhotoSuite 8 recommends your screen resolution be set to at least 1,024 x 768 pixels. Move the Screen Resolution

slider bar toward the right until you've reached this resolution or higher. PhotoSuite also recommends that you use a color depth of more than 16-bit. Select the highest possible setting from the Color Quality drop-down menu.

PROBLEM: Saved images become fuzzy. When you save a photo in PhotoSuite, the program automatically applies compression techniques to

keep the photo from being too large, and this can negatively affect the resolution of the photo. While this feature works properly the majority of times, in some cases, you will need to adjust the settings yourself to achieve the right balance of photo size and resolution.

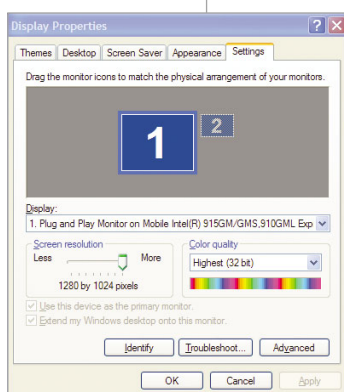
SOLUTION: With the file open in the workspace, go to the File menu and select Save As. Enter a file name and click the Options button. The Save Options dialog box has three tabs; select the General tab. Depending upon the file format, you may see a Photo Quality slider. For example, PhotoSuite allows you to adjust the photo quality for JPEG (Joint Photographic Experts Group) files. By default, the Photo Quality is set to 75 for JPEG files.

If you'd like your photo to have a higher resolution, move the slider bar to the right. Keep in mind that this will make your file larger, so if, for example, you're posting it on a Web site, it may take slightly longer to download. Conversely, you can create a smaller-sized file by moving the slider bar to the left, but the quality of the image will decrease. Select the Preview tab to see how your chosen setting affects the image.

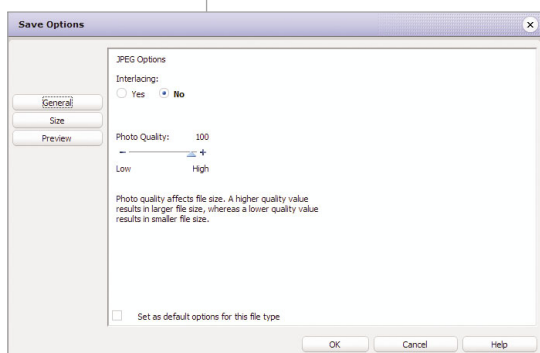
PROBLEM: You can't view or edit high-resolution photos. When we introduced PhotoSuite 8 several months ago, we mentioned its somewhat hefty system requirements. If you have insufficient resources, including free space in your Windows Temp folder, you may be able to open the program but not view high-res photos.

SOLUTION: PhotoSuite creates a temporary file that stores information when you're working with a file and deletes that info automatically later. If your Windows temp storage area is too full, however, you won't be able to work with a file, especially if the file is large. Clean out your temp storage area by going to Start, All Programs, Accessories, System Tools, and Disk Cleanup.

In the Disk Cleanup dialog box, select the Disk Cleanup tab and select the Temporary Files folder. (It's a good idea to select Temporary Internet Files, Recycle Bin, and Compress Old Files, as well.) Click OK, and once the Disk Cleanup utility is finished, restart PhotoSuite. If this doesn't do the trick, deleting unused programs via the Control Panel's Add Or Remove Programs tool may free up hard drive space. ■



Make sure your Windows settings for Screen Resolution and Color Quality are set to the highest values possible.



The Photo Quality slider lets you save files with a resolution higher than PhotoSuite's default value.

BY HEIDI V. ANDERSON

PowerPoint 2007

Troubleshoot Bullet Lists

Quick Studies
Problem-Solver

Presentation

Intermediate

2007 for
WinXP/Vista

When it comes to conveying information in text, there are few ways to make your point more quickly or clearly than with a bullet list. Even years of practice with PowerPoint's bullet lists, however, doesn't guarantee you won't face problems. We see plenty of users who ignore improper indents or line spacing because they don't know how to correct it. This month, we cover the solutions to some common bullet point frustrations.

One item in my bullet list has a single word on the second line. But if I press ENTER to move more words down, it creates a new bullet item.

Press SHIFT-ENTER to move words down but keep them as part of the same bullet item. This trick, known as a soft return, proves handy in a lot of other programs, as well.

I'd like more space between the list's lines.

You can add more space just by pressing the ENTER key, but for more refined control, highlight the list and then click the Line Spacing

Plain bullets are fine, but I really need some more creative options.

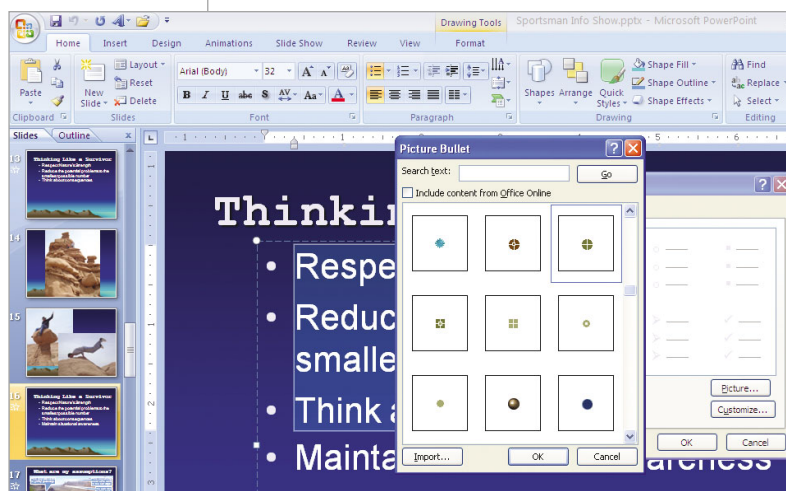
Highlight the bullet list and click the arrow beside the Bullets button in the Home tab's Paragraph group. (Clicking the main part of the button turns off the bullets, if you'd like a cleaner look.) The resulting dialog box presents a handful of choices, including check marks and a couple of different dots and boxes. For even more options, click Bullets & Numbering at the bottom of the dialog box. Use the Size box to change bullets' size as a percentage of the text it runs with. Use the Color button to edit the bullets' hue.

The Customize button presents a huge collection of characters. Most won't be of much interest, but you'll find a variety of boxes, triangles, diamonds, hearts, and even a little piece of fruit that looks a lot like the logo of Microsoft's operating system rival. Click the Picture button to open more interesting choices such as colored balls, swirls, and various geometric shapes. Even if you select one of these bullets, you can still use the Size and Color buttons to customize their look.

Between bullet points 3 and 4, I want to show a slide with a photo. When I return to the bullet list to reveal point 4, I don't want to reveal points 1, 2, and 3 all over again.

PowerPoint lets you customize a bullet list's animation (such as having points appear one-by-one as you click the mouse button), but only to a certain extent. To animate a bullet list, click it and then click Custom Animation on the Animations tab, click the Add Effect button in the task pane on the right, and choose an animation. Once the effect is added, click the arrow beside its name in the task pane and choose Effect Options. On the Text Animation tab, you can choose to animate all the bullet points at once or one at a time.

In our example, you could use two bullet list slides. Make a copy of the slide that showed points 1, 2, and 3. On the second slide, we want points 1, 2, and 3 to show up all together, and point 4 to show up when we click the mouse. So turn off the animation on the new slide's bullet list, using the Custom Animation pane. That way all three points appear when you go to the slide. Now add another bullet list right below that one, insert point 4 by itself, and animate it. ■



Don't get stuck with boring bullets. Use the Home tab's Bullets button to access a collection of colorful shapes to use in your lists.

button in the Home tab's Paragraph group. You can select various spacing setups, including (for truly obsessive designers) spacing at an exact point size you indicate. (Click Line Spacing Options to specify an exact point size.)

If some bullet points have multiple lines of text, you probably don't want to apply one spacing setup to the entire list. Two lines of the same point should be closer together than two separate bullet points. To tighten up lines, highlight the lines you want to change and select a different spacing for them (such as 1.0 for those lines and 1.5 for the rest of the list).

BY TREVOR MEERS

Quick Tips

Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Multicore Processors

Question: Why don't my programs run faster on a PC with a dual-core processor?

Answer: The benefit is not in the additional CPU cores, but in the programs that use them. The problem is that applications must be written to actually make use of two or more processors. Most traditional programs use a single-thread approach, relying on only one processor to operate. When additional processors are added to the computer, the program needs to be able to recognize the multiple processors and divide (or multithread)

the workload between the available processors. This is necessary even when those processors are on the same physical chip. Unfortunately, most everyday consumer programs are not designed to utilize multiple processor cores simultaneously, so the program continues to operate on only one core, leaving the other core effectively idle.

If you have a multicore processor, make sure that your new program purchases are designed for multithreading operation and able to use multiple cores simultaneously.

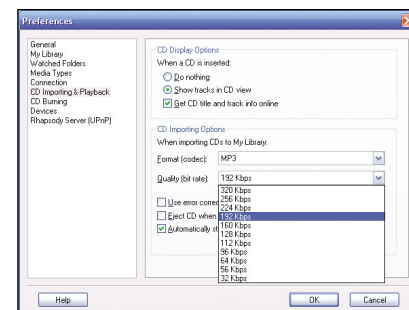
Rhapsody

Question: I'd like to import my favorite CD tracks into Rhapsody. What format or bit rate should I use when importing tracks?

Answer: Launch Rhapsody, click Tools, select Preferences, and choose the CD Importing & Playback option in the left menu. By default, Rhapsody selects the MP3 format at 192Kbps (kilobits per second) for average MP3 file size and sound quality. This is usually a fine choice for general-purpose listening, achieving a balance of file size and sound quality.

You can select a different format if you wish, such as AAC (Advanced Audio Coding) or WMA (Windows Media Audio). You can also opt for different bit rates. Higher bit rates will capture the imported track with higher fidelity but will result

in larger files. Lower bit rates will make for smaller files but at lower sound quality. Feel free to experiment with different formats and bit rates. Just remember that very high-quality imports will take up significant space on your PC's hard drive.

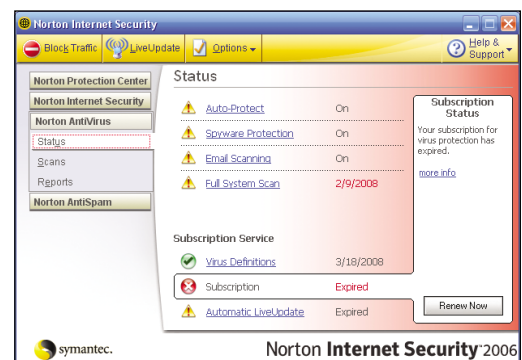


Rhapsody can import your favorite CD tracks using a variety of formats and bit rates.

Antivirus

Question: Will my antivirus software still continue to work if the subscription is expired?

Answer: Yes, the software will continue to work, but you will stop receiving updates. This means your computer may not detect the very latest viruses and variants—the software will only detect threats up to the last update it received during your active subscription period. The longer you delay renewal, the larger that “protection gap” becomes. The antivirus software will typically provide a link directly to the manufacturer's Web site where you can purchase a subscription renewal.

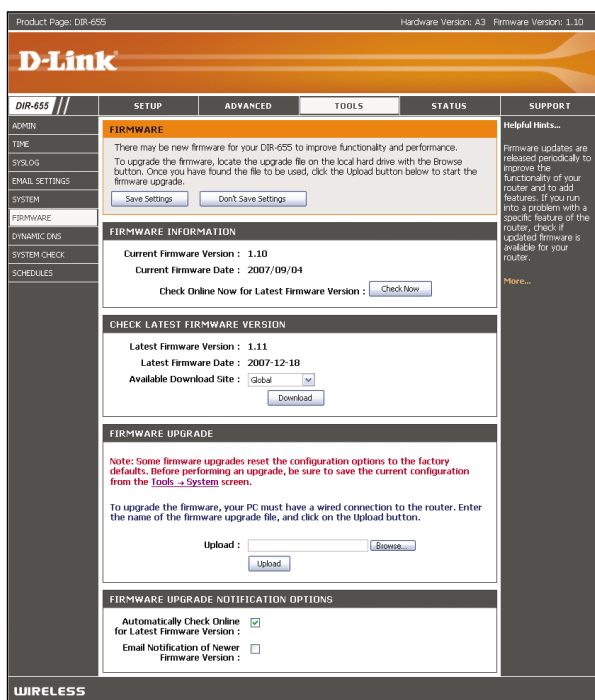


Security software will operate beyond its subscription expiration, but you will not receive any additional updates

Firmware Updates

Question: Should I be worried about firmware upgrades for my router? How do I keep all my current router settings?

Answer: Firmware updates generally fix bugs, improve device performance, and add features.



If your router is working fine for you, it may not be necessary to conduct an upgrade. However, if the router is encountering problems or would benefit from new or improved features promised by a firmware update, then it's probably worth the effort. For some routers, such as the D-Link DIR-655 (\$149.99; www.dlink.com), the unit will actually check with the manufacturer for available updates and allow you to initiate an update process when an update is available. These updates go to the router directly, not your PC. Always refer to the router's manual for detailed update instructions.

However, some updates require a complete reset of the router's configuration, so it's important to record the router settings before starting an update process. The DIR-655, for example, provides a Save feature that will copy the router settings to a file on a local PC hard drive. Once the update is finished, you can reload the settings into the router. This is a far faster and more convenient option than taking screen shots of the router setup pages or recording settings by hand.

Update your router's firmware to fix bugs, improve performance, and add features.

Wireless Networks

Question: Do I need to turn my wireless network's SSID (Service Set Identifier) off for security?

Answer: The SSID is basically the name of your network. Wireless access points typically broadcast the SSID so that other wireless users can see the presence of that network and then connect to it. The problem is that unauthorized wireless

users can also see your SSID and choose to connect to your network. For example, suppose that you set up a wireless router in your condo. Your neighbor in the

Turn off the wireless SSID (Service Set Identifier) to hide your network from possible intruders.

next unit can likely see your SSID and opt to join your network if it's an unencrypted signal—in turn, using your bandwidth to access the Internet.

One way to secure your network is to disable SSID transmissions. Administrators can disable the SSID through the wireless router's Web-based control panel by browsing to the wireless setup/configuration page. The SSID is typically enabled by default, but it can easily be disabled through a simple radio button selection. Remember to save any changes. Now, nearby wireless users that list available wireless networks will no longer see the disabled SSID listed—it is essentially hidden to anyone that does not already know the wireless network exists. Another way to secure your wireless network is to enable encryption, such as WPA2 (Wi-Fi Protected Access 2). Once the wireless data is encrypted, no one can join your network without your passphrase, regardless of whether the SSID beacon is on.



A Home-Theater Receiver

An A/V (audio/video) receiver is the heart of any stereo or home-theater sound system. It receives audio signals from devices such as DVD players and cable set-top boxes, amplifies the sound, and distributes it to the speakers. In some cases, the receiver also may decode the Dolby or DTS (Digital Theater System) soundtracks found on most movie discs, such as if the DVD or BD (Blu-ray Disc) player can't do it on its own. Most

home-theater receivers also "pass through" video to a television or monitor.

When speakers and devices are connected to a receiver, its mass of cables can obscure your view. Thus, here's a clean look at the inputs and outputs of a full-featured home-theater unit, the Sony STR-DA5300ES (\$1,699.99; www.sonymstyle.com). We've also listed a few (but not all) of each connection's typical uses.

HDMI

HDMI (High-Definition Multimedia Interface) can carry high-definition digital video and top-quality digital audio.

Input: BD players, some DVD players, some graphics cards

Output: HDTV (video pass-through)

Coaxial Digital

This RCA-type port carries multichannel digital audio via an SPDIF signal.

Input: BD players, DVD players, game consoles, some sound cards and motherboards

Phone Plug

These common connectors, also called TRS (tip, ring, and sleeve) plugs, carry stereo analog audio. They have the advantage of popping out easily when someone accidentally trips over a cord. Sizes include 6.3mm (1/4-inch), 3.5mm (1/8-inch), and 2.5mm (3/32-inch).

Input: most portable devices

Output: headphones, recording devices, powered speakers

Component Video

Using separate RCA cables for each color, this analog video transmission method nevertheless manages to make pictures look very good.

Input: BD players, DVD players, game consoles

Output: HDTVs (high-definition televisions), SDTVs (standard-definition televisions)

Optical Digital

Also known as TOSLINK (Toshiba Link), this connector uses a fiber-optic cable to send digital audio, most commonly using SPDIF (Sony Philips Digital Interface Format) signaling.

Input: some BD players, some DVD players, some game consoles, some sound cards and motherboards

Analog Audio

This RCA-style connector accepts one channel of analog audio. It can be adapted to phone plug connections.

Input: most consumer electronics

Output: speakers, recording devices (line level out)

Binding Posts

These screw down tightly on a speaker wire's bare end or banana plug connector. Each pair carries a channel of mono, analog audio. It's very important to keep the polarity correct with positive-to-positive (+) and negative-to-negative (-) connections.

Output: speakers

S-Video

S-Video (Separate-Video) is an analog video format that packs separate color and luminance channels into a single, thin cable. It's a close second to component video in quality.

Input: BD players, DVD players, some graphics cards

Output: HDTVs, SDTVs

Composite Video

Yet another use of the RCA-style connector, this low-quality analog video transport method combines color, brightness, and synchronization data into a substandard but viewable signal.

Input: DVD players, game consoles, some graphics cards

Coaxial Video/Audio

Also called an F or RF (radio frequency) connection, this physical type of analog connector can be used for a TV "rabbit ears" antenna, an FM radio antenna, or cable/satellite service. Male F/RF connectors either push on or screw on.

Input: cable and satellite set-top boxes or over-the-air broadcast antennas

Miscellaneous

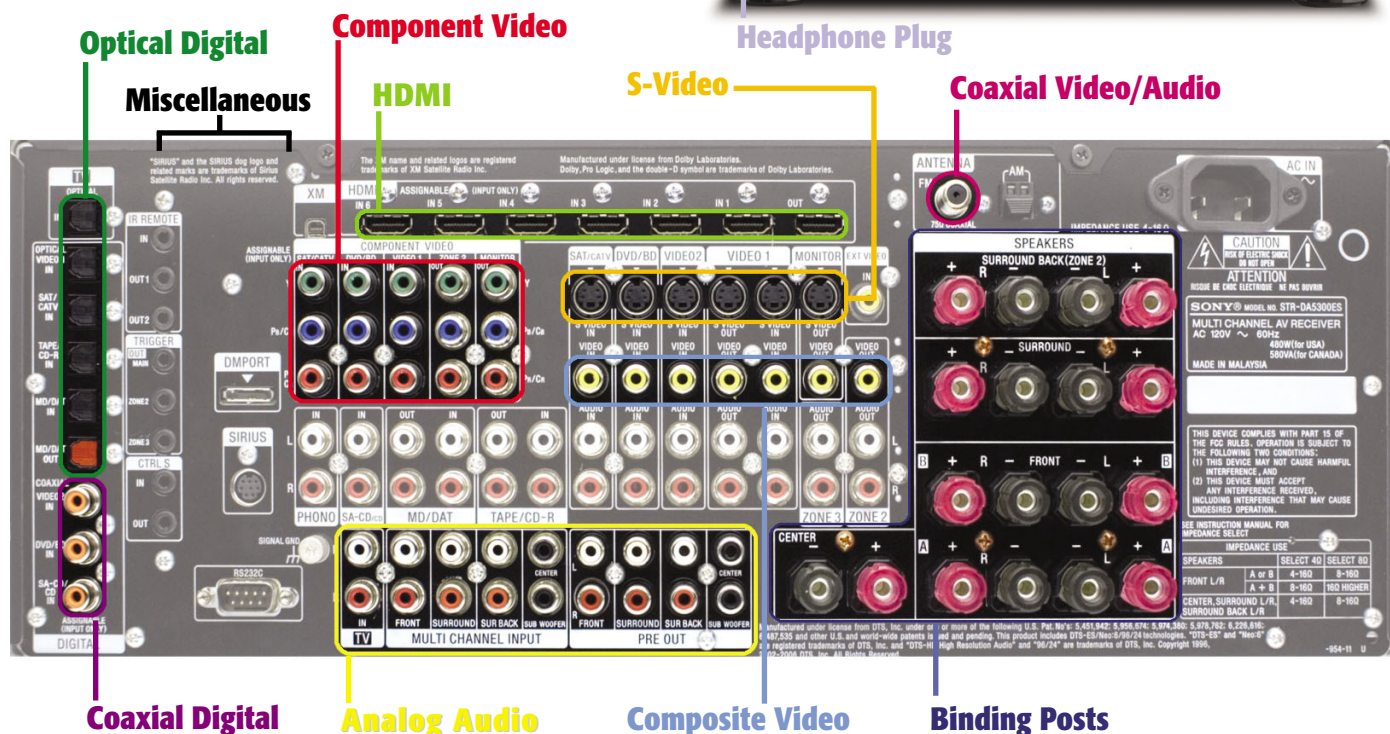
Manufacturers use various types of connectors for proprietary or uncommon purposes, such as Sirius and XM satellite radio services, infrared remote sensors, and Sony's Digital Media Port.

Not Pictured

Speaker Wire Clips

These clips each hold a bare speaker wire tip with spring pressure. As with binding posts, the polarity is important.

Output: speakers



WHAT TO DO WHEN . . .

You Drop Your Notebook



Short of having it stolen, we imagine the worst thing that could happen to a notebook is dropping it.

The good news is that a dropped notebook doesn't always result in the worst-case scenario, such as a damaged motherboard or hard drive or shattered monitor.

So before you assume all is lost, carefully work your way through the following list to assess any damage your notebook has suffered.

The Checklist

You can examine some parts of your notebook without turning it on. Others you'll need to check after booting it up. And some features, such as the screen, you'll need to examine both with and without the power, as we'll explain.

1: The Case

Check the exterior of the notebook to see if any part of the case is cracked, scratched, or dented. If minor abrasions occurred and they bother you enough that you want to fix or cover them, try one of these quick fixes.

Use a car care product, such as Scratch Out by Kit (www.kitwax.com; \$5 online;). Put a small drop on a clean cotton cloth and gently rub it in. Or, simply "patch" the scratch with a small sticker—or a Schticker (www.schtickers.com), a skin for your laptop that covers up minor

problems and simultaneously personalizes your notebook.

However, if the damage to the case is major, take it to an authorized service dealer or repair shop, which we'll discuss later.

When examining the exterior, don't forget to open the notebook to see if the hinges work properly. Also, test the latches to see if they still secure the lid tightly.

Trying to repair a broken hinge or latch yourself can be time-consuming. Your best bet is to let a service center fix it.

2: The Screen

One of the most fragile parts of a notebook is the monitor. After opening the notebook, see if the screen is intact. If it's damaged (but still displays an image), you could get some temporary use out of your laptop by hooking it up to a desktop computer's monitor.

If the screen appears intact, boot up the notebook and see if there are any lines or dead pixels on the monitor. If the screen is completely black or you see lines, then the problem could be a broken connection between the monitor and the motherboard. You can remove the case to see if any of the cables are disconnected.

There's no quick fix for dead pixels. Perhaps you can live with a couple of them. But eventually, you'll need to replace the entire monitor to get rid of dead pixels. Though it's possible to replace the monitor yourself, this can be tricky and expensive, especially if you don't do it right the first time. We recommend letting a professional handle the process.

Sometimes the wisest course of action,
especially for monitors and motherboards,
is to let the pros handle it.

Another possible problem is that the backlight is broken. Normally, a notebook backlight, like a regular bulb, wears out gradually after many hours of use. But a drop could permanently damage the backlight or jar it out of place. You can buy a replacement backlight for about \$10 to \$15, but installation is beyond the scope of this article. Unless you're confident in your abilities, we recommend letting a pro handle the task.

(NOTE: Before attempting to make any repairs on your notebook, always make sure you remove the battery and/or unplug it first.)

Don't overlook the possibility that a nonworking screen is due to a loose or damaged video adapter or that one or more of the pins on the video cable are bent. If this is the case, you may even see a message, such as "No signal source," on the screen. It's possible to straighten out a bent pin or replace a video card by yourself.

3: CD/DVD Drive

Open and close the CD/DVD drive to make sure the tray ejects smoothly. If it doesn't, push a very small pin or wire into the hole on the front of the drive and try to unlatch it. If the problem persists, however, you'll need to replace the drive.

4: Battery

When you power on your notebook for the first time after dropping it, try using battery power first. If it works, you've ruled out a damaged battery. If the battery won't power on the computer (and you know it was charged before the drop) but your AC adapter will, then you likely have a damaged battery, which you can easily replace yourself.

5: Fan

A damaged fan can trick you into thinking your hard drive is the problem, even if it's fine. That's because the fan performs the essential work of keeping the interior of your notebook cool. If the fan stops functioning, your computer can overheat and then perform sluggishly or shut down.

After you turn on your notebook, wait for the fan to turn on, as well. If you don't hear it, or if it sounds overly loud, as if it's working too hard, turn off your computer, let it cool down completely, open the case of your computer, and examine the fan.

You should be able to tell right away if the fan has been damaged from the fall. If it appears intact, at the very least clean it. One simple way to do this is by blasting the fan with a can of compressed air; it won't leave anything foreign behind in your notebook.

If the fan is damaged, let a repair service replace it.

6: Hard Drive/Motherboard

If you can't get a component to work, whether it's a drive recognizing a disc or a peripheral such as a printer, the motherboard might have been damaged.

If you detect damage to an easily replaceable component, such as a memory module, you can replace that. But if you can't pinpoint the problem, let a professional run it through diagnostics and replace the component(s)—or the entire motherboard—for you.

Like the monitor, the hard drive is extremely sensitive to being dropped.

If the drive has effectively been killed, first try to recover the data, either through a data-recovery program (check out the products at www.runtime.org) or by sending your notebook to a company that can extract the data for you, such as SalvageData (www.salvagedata.com).

Depending on your level of comfort, you can try to replace the hard drive in your notebook yourself.

Repair Service Centers

Although you can repair some of the types of damage we've mentioned, sometimes the wisest course of action, especially for monitors and motherboards, is to let the pros handle it.

Your first step is to check your users manual and/or warranty that came with the notebook. Either of those—or the manufacturer's Web site—may direct you to an authorized service dealer for your notebook brand in your area.

You can also see if the store from which you bought your laptop offers in-store repairs or in-home service. Best Buy, for instance, offers in-home and in-store technical support through the Geek Squad (www.geek.squad.com).

Another option is to ship the notebook to a nationwide repair center. For example, both Laptoprepair.com and Laptopservice.com perform repairs on all makes and models of notebooks. You can get an estimate for the work before you ship your notebook.

Regardless of which service option you choose, ask beforehand if the repairer guarantees its work and then get it in writing. ■

BY RACHEL DEROWITSCHE



How To Fix Common Problems With . . .

Web Cams



Web cams are becoming more prevalent all the time. With programs such as Skype and SightSpeed, friends and family can engage in real-time video chat from halfway around the world. YouTube has created a whole new use (and for some, probably, misuse) of the Web cam. Still others use Web cams to promote vacation spots, showcase business opportunities, or provide constant scrutiny and security for a property.

In the great scheme of computer drama, Web cam problems don't exactly land on the same level as the blue screen of death. For those users who have come to rely on the Web cam as a means of communication, however, inconvenience can quickly turn into heated frustration. This becomes truer still when you're dealing with a new operating system, such as Windows

Vista, which typically comes with a host of its own kinks to work out. We'll take a look at common Web cam troubles and possible solutions here.

Some fixes require that you know exactly what type of Web cam you're dealing with. If you don't recall the brand and model of the camera you have, take a careful look at any markings on the device itself. If you can figure out at least the manufacturer, you may be able to get some help on the Web. For instance, the Web site of Logitech, one of the biggest Web cam makers, includes photos of different models to help you pick yours out of the pile. If the camera works at least partially, you can also usually look up the specifics through your operating system. In Vista, for example, open the Control Panel, click System And Maintenance, and then choose Device Manager. Expand the Imaging Devices

list and you should see the name of your Web cam there, assuming it is currently connected to your PC.

Problem: This Web cam doesn't work (and has never worked).

Solution 1: Reconnect the cables.

Before going to a lot of trouble re-installing drivers or taking other more-involved actions, start with the basics: cables. It's a cliché, but sometimes it turns out that a cable really has come loose. First, there's the USB cable to the Web cam itself—check both the connection to the PC and (if the cable is removable) the connection to the camera. If the camera plugs into a powered USB hub, make sure the power cable to the hub is plugged in.

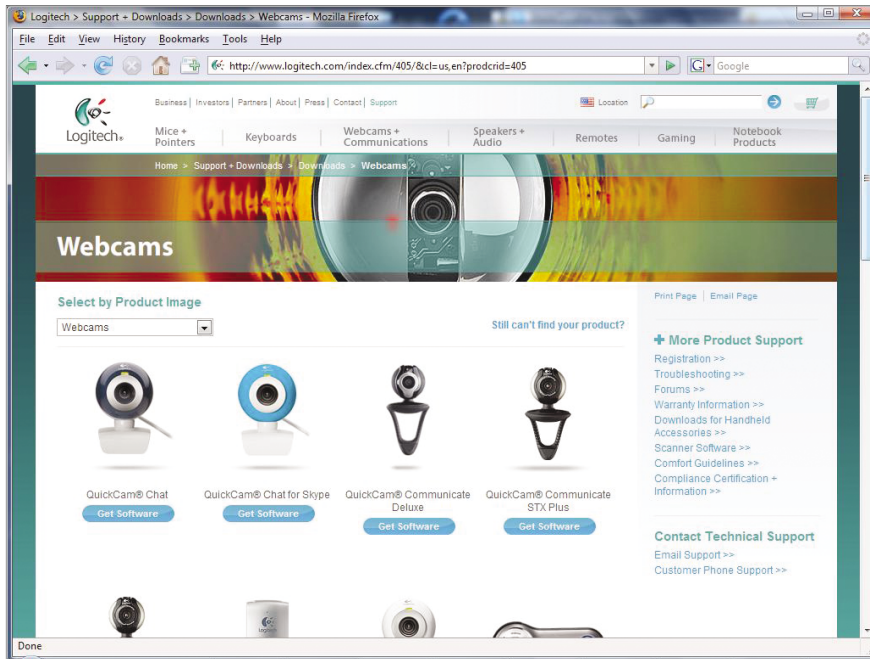
Solution 2: Try another program.

Your Web cam might work in one program but not another, particularly if you're trying out new software that you haven't previously used. If everything runs smoothly in another application, take a look at the new program's help files. Check the settings screens and make sure your camera is selected as the video device for the application.

Solution 3: Set your camera as the video input device. Most programs that use Web cams, such as chat software, include in their various settings the option to choose the video input device you want to use. If you have the wrong device set as your video input, your Web cam won't have a chance to work. For instance, in Skype 3.6, you can choose the video device by clicking Tools and then Options. Click the Video Setting category (you may have to click General first) and pick your camera from the Select Webcam drop-down list. In many programs, including Skype, you'll also likely see a Test button somewhere around these settings. This is a good way of checking to see that you at least have working hardware and software that understands how to use it.

Solution 4: Install updated drivers.

If your camera doesn't seem to show



The Logitech Web site includes a picture index of its Web cam lineup to help you determine which model you have and, therefore, which driver you might need.

up at all in lists of available video devices or exhibits other odd behavior, the latest **driver**—the software used by the camera to communicate with the operating system—might help.

To get new drivers, you'll need to go to the Web site for the camera's manufacturer. From the camera maker's home page, look for the Downloads or Support link. For instance, on the Logitech site, there is a small "Support" link at the top of the page that leads to another page with a Downloads + Parts link. Click that, and you'll be able to select your specific Web cam model from a list and download the newest drivers and instructions.

Most download pages will ask you to select your operating system, which brings up another good point: If you've recently switched from Windows XP to Vista, that's just the kind of thing that necessitates updated drivers. Download the correct version and follow the manufacturer's instructions for the smoothest install. You'll probably need to disconnect the camera, install the driver, and then reconnect.

While you're at it, it's also a good idea to check Windows Update to see if Microsoft has released any other new drivers that might somehow impact your Web cam's performance. In Vista, click Start, All Programs, and Windows Update.

Solution 5: Check your firewall. Especially in a company network, firewalls designed to thwart security breaches could also thwart your video communications. If the camera seems to be working and the software seems to recognize the camera, the firewall (either on your end or the other end) might be the culprit. Check with your network folks, or look at the documentation for your firewall to find out how to allow video communications.

Problem: My Web cam used to work, but now it doesn't.

Solution 1: Start with the basics. It's frustrating when something that was working suddenly stops. Try some of the solutions listed above, just to make sure nothing basic is wrong—reconnect cables and try to

narrow down the problem to either the Web cam or the software you're using with the Web cam.

Solution 2: Reboot. The second simple solution is to try restarting your PC. Believe it or not, a good reboot often solves problems with hardware drivers acting up. Even if you don't think it will work, for whatever reason, it's easy enough to try. You could also try unplugging the USB cable to the camera and then plugging it back into the PC (or USB hub).

Solution 3: Reinstall drivers. If you've installed any other hardware recently, your Web cam might not be playing nice with the new hardware driver. Reinstalling the Web cam driver might help set things right again. Either rerun the install routine using the CD that came with the Web cam or download updated drivers from the manufacturer's Web site as described above.

Solution 4: Replace the camera. It's unlikely that the camera itself suddenly went kaput for no identifiable reason, but not out of the realm of possibility. You can try it on another computer to rule out this problem. If it doesn't seem to work regardless of the machine to which it's attached, the time has arrived to shop for a new Web cam.

Problem: My video seems slow or "choppy" on the receiving end.

Solution 1: Reduce expectations (at least a little). A Web cam streaming moving pictures over the Internet is not yet the futuristic videophone we've long been promised. We're a lot closer to real, high-quality videophones than we are to jet packs, but a first-time user might be a little disappointed. The picture is often kind of jerky and may be fuzzy. Depending on network conditions, there will probably be a bit of a delay between you speaking and the person on the other end hearing it.

Solution 2: Try a different program. Almost every name-brand Web cam is capable of decent video. Some of the newest cameras offer a higher-quality video, but whether those make

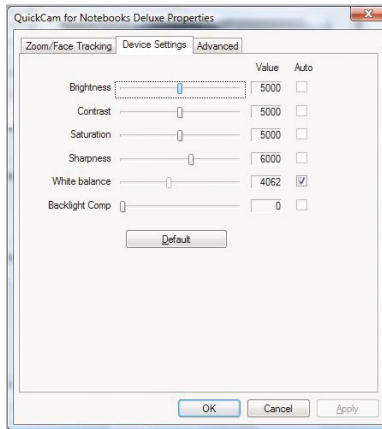
a difference for you depends on the speed of your connection. Of far greater importance, it seems, is the variability in quality of programs used to send video across the Internet. In testing various chat programs using the same cameras and Internet connections, we found a wide range of quality. Given that many popular video chatting programs are free, it doesn't hurt to try a few and see if your experience improves.

Solution 3: Close other Web applications. Video needs all of the network resources it can get, and other programs also making use of the Internet can slow things down. If you're downloading a huge file in the background, for instance, that bandwidth will not be available for video. You should close other open programs before commencing your video chat, or at least every application that could be using the Internet. (Except security software.) Don't forget the applications you might have running in the background, such as torrents or online backups.

Solution 4: Buy more bandwidth. As noted above, the average broadband Internet connection is fine for a relatively low-resolution, albeit occasionally choppy picture. Dial-up connections, however, won't come close to making the cut. If either you or the person you're trying to chat with is trying to get by with a regular old modem, it's time to hang up and rethink things. If everyone on the conversation already has a broadband connection but you still experience problems that can't be solved another way, you might consider having everyone run an Internet speed test such as the one at www.speedtest.net. Compare your actual results with the speeds promised by your ISP (Internet service provider) and consider alternatives.

Problem: The video seems too dark or too bright.

Solution 1: Adjust the camera. Access your Web cam's settings either



In addition to settings in the communications application you're using, your Web cam also likely has device-specific settings you can access from within the chat program or through the camera's own software.

through the program you're using or the software that came with the camera. Most have brightness and/or contrast controls. Fiddle with these settings and others your camera may have until you get the best possible picture.

Solution 2: Set the stage. There's a reason movie productions employ all those fancy (and usually big) lights when filming. Cameras need plenty of light to generate a good image. Turn on the room lights or a desk lamp that shines plenty of light toward the subject of the video. You'll also want to avoid sitting in between the camera and a light source. For instance, you don't want a bright window behind your head. Most Web cams and the software driving them will automatically attempt to compensate for exposure problems, but it's hard when the camera sees bright objects and dark objects in the same frame. Something has got to give—if the sun is shining behind you, your face will probably be too dark to see.

Problem: Audio is distorted, too loud, or too soft.

Solution 1: Move the microphone or adjust the volume. If the person you're speaking to complains about

your voice being too loud or distorted, you might just need to put a little more distance between you and the microphone. Depending on your setup, the microphone might be built into the Web cam, integrated into your laptop, or a separate attachment to your PC. Try different placements and see if that improves things.

Solution 2: Adjust software and Web cam settings. If moving the microphone doesn't work, or if there is no sound at all, check the settings for the program you're using and the Web cam or separate microphone. For instance, in Skype you would open the Options screen under Tools and click General and Audio Settings to make sure that the program is using the correct audio source (your Web cam or other microphone) and the correct destination (your sound card/speakers setup). Click the Microphone drop-down menu to change the device Skype will use. Some programs include a wizard that helps set recording and volume levels for the best result. In Yahoo! Messenger, for example, you would click Preferences in the Messenger menu, and then Calling & Audio, and finally Open The Call Setup Assistant.

Solution 3: Check your drivers. As with most other problems, outdated drivers might have something to do with sound difficulties. Vista users might check to see that they have updated Vista drivers for their sound hardware. As mentioned previously, click Start, All Programs, and Windows Update. Then, click Check For Updates.

With basic Web cam problems behind you (hopefully), you're ready to start conferencing or making video. You shouldn't expect stunning cinematography out of a tiny Web cam, but with the right driver and software settings, you should be able to have some fun without too much frustration. ■

BY ANNE STEYER PHELPS

How To Install . . .

An Optical Drive



Even in this age of software and movie downloads, there's still a place for CD, DVD, and even BD (Blu-ray Disc). Optical formats are cheap per gigabyte; the current epitome is a 20-cent, bulk-packed DVD-R (DVD-recordable) or DVD+R (DVD plus recordable) that can store 4.7GB of data. Some formats are spacious; witness a 50GB dual-layer BD-R (BD-recordable) or BD-RE (BD-rewriteable).

Optical discs are portable. They don't take up much shelf space. They can store music, photos, and movies, as well as data. Some are playable in car stereos, some recordable in high-definition camcorders. And a few specially formulated archival discs are supposed to be able to retain their data—meaning *your* data—for decades.

See Your Way Clear To Upgrade

Besides RAM, an optical drive is one of the easiest things to install in your PC. It's literally plug and play with virtually any current operating system, meaning you shouldn't have

to install a driver. And once the drive is in, you don't have to format it as you would a hard drive.

Despite the high price, we chose an LG Super Multi Blue GGW-H20L (\$399.99; us.lge.com) for our new drive. This SATA (Serial Advanced Technology Attachment) powerhouse can burn virtually any BD, DVD, and

CD format. As a bonus, it also reads the discontinued HD DVD (high-definition DVD) format.

Our test mule PC already had a very capable DVD burner, a 20X Lite-On LH-20A1L (about \$35; www.liteonit.com). Because most current DVD burners are faster at reading and writing CDs and DVDs than any blue-laser (BD or HD DVD) drive with such capabilities, we decided to keep the Lite-On in the PC for those duties. (On a side note, CD and DVD drives use a red laser to read and burn their discs, whereas BD/HD DVD drives use a blue laser. The blue laser has a shorter wavelength and can be focused more precisely. Therefore, it can store more information on a disc than a red laser, just as you could write a more detailed note to someone with a pen than with a thick marker. Most BD and HD DVD drives incorporate both blue and red laser assemblies to read and perhaps burn both classes of discs.)

We'll limit our stately new LG GGW-H20L to playing BD movies and, when blank disc prices come down, burning BD-R and BD-RE media. When you consider that a new DVD burner can cost \$26 or less online, it just makes financial sense to put the most wear and tear on the much cheaper drive.

Users willing to pay a higher price for a more future-proof drive should look at a BD burner, such as the LG GGW-H20L (\$399.99; us.lge.com), or a BD-ROM, such as the Sony BDU-X10S (\$199.99; www.sonymstyle.com).



Installation

You'll need a Philips screwdriver, preferably one with a magnetic tip. Work carefully. You don't have to treat an ODD (optical disc drive) like it's a carton of eggs, as you should a hard drive, but you don't want to subject it to unnecessary jars and bumps, either.

Finally, take a break every minute or two to touch a grounded metal object. This will dispel any static electricity you've built up so you won't zap something sensitive in your computer.

Our LG drive's SATA interface made our installation simple. For information on how to configure a slightly more complex EIDE (Enhanced Integrated Drive Electronics) drive, skip ahead to the next section.

Turn off your PC and unplug the power cord from the rear of the power



Retail drives typically come with software, a data cable, and mounting screws, but Sony often throws in a replaceable drive bezel, a SATA power adapter (where applicable), and an emergency tray-opening tool.

supply. Remove both side panels from the computer case and pop off the front panel, as well. If you've never done this before, do it cautiously so you don't break anything.



Slide the new drive into an unused 5.25-inch drive bay and then secure it with the four included screws.

To remove your old drive, wiggle out its data and power cables. Next, remove the four mounting screws from its sides and pull the drive out of the front of the computer case.

If you plan to simply add an optical drive to a spare 5.25-inch drive bay, as

How To Shop For A New BD Or DVD Drive

Buying an optical drive is simple once again. Now that HD DVD (high-definition DVD) is extinct, there are really only two choices: a DVD burner or some type of BD (Blu-ray Disc) drive.

A recordable DVD drive, or DVD±RW (DVD rewriteable), is the cheaper, faster option. They can read and write CDs and most, if not all, types of DVDs. This includes 4.7GB DVD-R (DVD-recordable), DVD+R (DVD plus recordable), DVD-RW, and DVD+RW; 8.5GB DL (dual-layer) DVD+R; and sometimes 4.7GB DVD-RAM.

And then there's BD, the winner of the high-definition format war. The only reason to buy a read-only BD-ROM is if you really want to watch BD movies on your PC, as software is lacking in the new format. (You'll also need a PC that's able to play Blu-ray movies; see the The Fine Print section of this article.) Likewise, a BD-R/RE (recordable/rewriteable) is the ticket only if you want to be prepared to write 25GB or 50GB on a single disc once media prices drop low enough to make it worth your while. Most, but not all, BD writers can write DVDs and CDs, too. However, a BD-ROM may not be able to write data to any type of disc.

Some drives are no longer compelling choices. There's really no call to buy a mere DVD-ROM or CD-ROM unless your funds are very limited. A DVD±RW will read discs just as fast as its read-only, low-buck cousins. And only if you've already invested in more than a few HD DVD movies should you consider spending extra on a BD drive that also reads HD

DVD. You might be able to find a bargain on a dedicated HD DVD-ROM. On the other hand, movie titles that were once exclusively available in HD DVD are being released (or slated for release) in BD, so if you haven't yet bought "King Kong" or "Batman Begins" in high-def, go Blu-ray.

As for blank media, such as DVD+R and BD-RE, know that "R" discs can only be written once (or several times until they're full), whereas "RW" and "RE" discs are rewriteable. Recordable discs are cheap and generally very compatible with most devices, but rewriteable discs cost more, may require special writing software, and don't work in many consumer electronics. Don't worry overmuch about the differences between the + and - DVD formats. With very few exceptions, recent drives and players can handle + and - media interchangeably. Check your drive's or standalone recorder's specifications before you buy blank discs for a particular application.

Finally, a word on speeds. You'll see drives and blank media rated for the top speeds they can theoretically attain during reading and writing near the end of a full disc. Those speed ratings are founded on multiples of a base 'X' speed. For BD, 1X equals 4.5MBps (megabytes per second); for DVD, 1X is 1.35MBps; and 1X CD is 0.15MBps, or 150KBps (kilobytes per second). In our example, the LG GGW-H20L is a 6X BD-R writer (assuming a blank disc is compatible with this speed), a 16X DVD burner, and a 40X CD writer. In reality, disc burning always takes longer than the speed ratings indicate. **I**

we did, remove the bay's dummy plate so you'll be able to access the drive from the front of the PC. The dummy plate may be a replaceable piece of plastic or metal on the front panel or even a perforated metal plate you'll have to punch out of the case.

Slide the new drive into the empty drive bay and then loosely install one of the included mounting screws through a slotted hole in the side of the drive bay. Reinstall the front panel of the case and then slide the drive forward or backward until it's roughly flush with the front panel. Make the screw just snug enough to keep the drive from moving easily and then install the other three screws. When you're finished, tighten them all.

Our drive had a SATA interface, so connecting it was as easy as hooking up an included data cable from a SATA header on the motherboard and then attaching a SATA power cable from the computer's PSU (power supply unit). Both types of connectors are L-shaped, so there's only one way to attach them. If your PSU doesn't have any (or enough) SATA power connectors, use an inexpensive 4-pin Molex-to-SATA adapter cable (some retail drives include these).

Finally, replace the side panels, plug in your computer's power cable, and start the PC. You shouldn't have to install a driver for your new drive, but you should wait a few minutes until the OS (operating system) detects the drive and tells you that it's ready to use.



If your computer's power supply includes a SATA power connector, this is how your SATA drive's data and power hookups will look.

How To Spot Problem Optical Drives

Optical Drives (optical disc drives) are mechanical devices, as well as electronic, so they can wear out in a number of ways. Some simply quit when they've had enough. Others start to act funny and may continue to partially function (such as reading but not writing) for years. Basic troubleshooting steps include trying other brands of media, running a cleaner disc through the drive, and updating its firmware.

Your drive may be failing if:

- discs work in another drive, but not yours;
- it can't read some or any types of discs;
- it seems inaccessible or causes delays in Windows Explorer;
- it can no longer write or causes errors during burning;
- it makes strange noises.

Now is the time to install any software that came with your drive, such as a BD player application.

EIDE Drives

There are still many optical drives on the market with an EIDE interface, so let's visit the topic a little. Installation is the same as for a SATA drive except in a couple of respects.

Before you install the drive, decide whether you'll be connecting it to a ribbon-like EIDE data cable that's already attached to another device, such as a CD/DVD drive. You shouldn't connect an optical drive to any EIDE cable with a hard drive attached to it, as it may slow down the hard drive's performance and make your PC seem sluggish.

If the new drive will be the only device on the cable, you should attach it to the cable's end connector after you

install the drive. If there's already a device on the end connector, use the middle connector.

Next, you may need to move a jumper on the rear of the new drive. A **jumper** is a small block of plastic, usually black, with metal inside it. By connecting designated pairs of pins, jumpers enable certain settings.

If you're attaching your new EIDE drive to the end connector on a data cable, set the drive's jumper(s) to the Master position, according to the diagram on the drive's label or in its setup documentation. If you need to hook up your drive to the middle connector, set its jumper(s) to Slave and verify that the device on the end of the cable is set to Master. Now you're ready to install the drive according to the instructions above.

The Fine Print

If you're hoping to watch high-definition movies with your new BD drive, remember that it's a much more restrictive experience than DVD viewing. You'll need an HDCP (high-bandwidth digital content protection)-compliant graphics card and monitor (preferably a 1,920 x 1,080 widescreen), and you'll have to connect them with a DVI (Digital Visual Interface) or HDMI (High-Definition Multimedia Interface) cable. You'll need a very fast PC, too, and compatible player software. ■

BY MARTY SEMS



If your power supply is an older model, you'll need to use an inexpensive Molex-to-SATA power adapter to connect it to a SATA drive.

EXAMINING ERRORS

COMPILED BY THE SMART COMPUTING STAFF

Error: Code 800736CC

Translation: When trying to install Windows updates, you may see this error and notice that the updates will not install. The error is likely caused by a corrupted file. To resolve the issue, you'll need to make the updater download the files again and then reinstall the updates.

Solution: Navigate to C:\WINDOWS\SOFTWAREDISTRIBUTION\DOWNLOAD, where C: is the hard drive on which Windows is installed. Copy the Download folder to another location to back it up, and then delete the contents of the original folder. (*NOTE: If you know which update failed to install, you can delete just the files in the Download folder associated with that update instead of deleting everything in the Download folder.*) Reboot your machine. Next, open Internet Explorer



Windows Updates

and navigate to windowsupdate.microsoft.com. Check for the latest updates. The updater should then download and apply the previously failed updates.

If this still fails, you might also need to change or restart the BITS (Background Intelligent Transfer Service). To do this in Vista, log on to your computer as an administrator and then open the Start menu and navigate to the Control Panel. From the Control Panel, select System And Maintenance and then choose Administrative Tools. Double-click Services and enter your administrator password, or provide confirmation if necessary. Next, right-click Background Intelligent Transfer Service and then choose Properties. Select Automatic from the Startup Type drop-down list. In the Service Status area, click the Stop button. After the service has stopped, click the Start button. Finally, click Apply and OK. (To find this tool in Windows XP, click Start, Control Panel, Administrative Tools [in Classic view], and Services.) You can close all open windows after restarting the process. ■

Error Message: HP OfficeJet COM Event Manager has encountered a problem and needs to close.

Translation: This error message may occur after you install the printer software for a HP MFD (multifunction device). HP indicates that the error is likely to occur when your PC has trouble installing the

listed software. Although the error may close the program, it's possible that all of your MFD's functions may continue to work.

Solution: To fix the problem, HP suggests that you uninstall and reinstall the software that came with your MFD. Insert the software CD that came with your printer, and at the Startup screen, select the

Uninstall option. If this startup screen does not appear, you can access the CD by navigating to My Computer and double-clicking your CD drive. After uninstalling, restart your computer and insert the software CD again. Click the Install option, and when the HP Director loads after the installation has finished, run the Software Update feature and apply all the patches. ■

Error: The server you are connected to is using a security certificate that could not be verified. The certificate's CN name does not match the passed value. Do you want to continue using this server?

Translation: This Outlook error often involves SSL (Secure Sockets Layer), which is used to

maintain security between the email client and its mail server.

Solution: Some users have reported encountering this error when they have entered incorrect POP (Post Office Protocol) and/or SMTP (Simple Mail Transfer Protocol) ports and/or server names in Outlook, or when a change by their email service provider has rendered these settings incorrect. Ask your

ISP (Internet service provider) or email service provider for the correct POP and SMTP port numbers and server names, as well as whether to enable SSL on these connections.

In general, it's important to visit Windows Update once in a while and look through Optional Updates for the latest root certificate download. It may not fix this particular problem, but it may help you avoid similar errors. ■

Error: TeaTimer.exe

Translation: Spybot Search & Destroy's Web site (www.safer-networking.org) describes TeaTimer as a "tool of Spybot-S&D which perpetually monitors the processes called/initiated. [TeaTimer] immediately detects known malicious processes wanting to start and terminates them, giving you some options how

to deal with process in the future." The options include telling TeaTimer to inform you when a potentially malicious process tries to start, automatically killing a process when detected, allowing a process to run, and deleting the file associated with a malicious process. TeaTimer can also detect processes trying to change critical Windows Registry keys and lets you allow or deny these attempts. If you have installed

Spybot, TeaTimer runs in your system's background if it's enabled.

Solution: You can disable TeaTimer by opening Spybot and clicking Mode and then Advanced. Next, click Tools and then Resident. Uncheck Resident TeaTimer (Protection Of Over-All System Setting) Active. Additionally, the latest version of Spybot, version 1.5.2, gives you an option to not run TeamTimer.exe upon installation. ■

Error Message: Windows has blocked some startup programs.

Translation: Windows will display this message when a program or a service with UAC (User Account Control) restrictions attempts to start. User Account Control is set up to help prevent malware programs from damaging your computer, so it will alert you when a questionable program tries to load.

Solution: According to Microsoft, you'll first need to find out which programs and services are being blocked. In the notification area of the error message, click Blocked Startup Programs. Then select Run Blocked Program. You'll see which programs have been blocked. Next, select one of the following options to stop the error message.

Allow The Blocked Program To Run

If you trust the blocked program and want it to continue loading despite the UAC warning, simply click the Blocked Startup Programs icon in the notification area. Hover your cursor over Run Blocked Program and click the program you'd like to start. You may need to provide an administrator password or click Continue to proceed.



User Account Control

Disable The Program

You can disable the blocked program or service by first clicking the Blocked Startup Programs icon in the notification area. Then, select Show Or Remove Blocked Startup Programs, which will start Software Explorer in Windows Defender. Find and then choose the startup program or service in Software Explorer. Click Disable and confirm by selecting Yes.

Remove The Blocked Program From The Startup Process

To do this, open the Start menu and type `appwiz.cpl` in the Search

box. Click Enter. Go to the Programs And Features list and find and select the blocked program. Choose Uninstall/Change.

If you are unable to remove the program by following the steps above, try an alternative process. Select the Blocked Startup Programs icon in the notification area, and then click Show Or Remove Blocked Startup Programs, which starts Software Explorer. Find and select the startup service or program. Click Remove, and then confirm by clicking Yes. For further information regarding this error message, go to support.microsoft.com, type 930367 in the search field, and press ENTER. ■

Have questions about an error message you've seen? Send us your message (errormessages@smartcomputing.com), and we'll try to decipher it. Tell us what version of Windows you're using, give the full text of the error message, and provide as many details in your explanation as possible. Volume prohibits individual replies.

FAST FIXES

Update For The 2007 Microsoft Office System

Problem: You may encounter at least one of several error messages when you try to install Microsoft Office 2007 Service Pack 1. These error messages include “Installation Failure: Windows failed to install the following update with error 0x80070643: 2007 Microsoft Office Suite Service Pack 1 (SP1)” or “2007 Microsoft Office Suite Service Pack 1 (SP1) has stopped responding.” In the 2007 Microsoft Office suite SP1 installation log, you may also see an error message similar to “Error 1935. An error occurred during the installation of assembly component { 4 6 1 7 4 A 6 2 - F A F E - 4 B D 6 - 9662-F9A9F588F034}. HRESULT: 0x80131047. assembly interface: IAssemblyCacheItem, function: Commit, assembly name: Microsoft.Office.InfoPath.Client.Internal.Host, fileVersion=‘12.0.6215.1000’, version=‘12.0.0.000000’, culture=‘neutral’, publicKeyToken=‘71E9BCE111E9429C’” or “Error 1935. An error occurred during the installation of assembly component {04E73476-518E-4B6A-8E10-021A00078847}. HRESULT: 0x80131047. assembly interface: IAssemblyCacheItem, function: Commit, assembly name: Microsoft.Office.Interop.PowerPoint, fileVersion=‘12.0.6211.1000’, version=‘12.0.0.000000’, culture=‘neutral’, publicKeyToken=‘71E9BCE111E9429C.’”

Solution: Download an update for Microsoft Office 2007 that corrects these errors. Go to support.microsoft.com and type **KB946691** in the Search field and click the Search button. Click the You Receive An Error Message When You Try To Install The 2007 Microsoft Office Suite Service Pack 1 link. When the next page loads, click the Resolution link. Then click Download The Office2007-kb946691-fullfile-x86-glb.exe Package Now link. This will

take you to the download page for the update. Click the Download button in the blue Quick Details box. When prompted, choose to save the file to your hard drive. After the download is complete, close all programs that are running on your PC. Then locate the file on your hard drive and double-click it to launch the installer. Follow any instructions you see on the screen. After the installation is complete, restart your computer.

support.microsoft.com

Pinnacle Systems Studio 11 Discexport Patch

Problem: Pinnacle Systems’ Studio 11 software had a bug in which DVDs burned using the program would play back without audio. In addition, the IFO (InFoRmation) files of content generated with Studio 11 contained the wrong information.

Solution: Download and install the Studio 11 Discexport Patch, which resolves the problems described above. Go to Pinnacle’s Web site (www.pinnaclesys.com), point to Support, and click Downloads. From the list of available downloads, click the Studio 11.1.2 Release Patch link. You’ll see a list of downloads that are available for Studio 11. Click the one titled Studio 11 Discexport Patch. You will see three blue Download Now buttons. Click the one that corresponds to the version of Windows (Windows XP-SP2, Windows Vista 32, or Windows Vista 64) that is installed on your PC. Pinnacle Systems’ site will check to see if your copy of the software is registered. You may be prompted to type your email address or provide other information to register your copy of Studio 11. Follow any on-screen instructions to register, download, and install the patch. After the patch is installed, restart your computer.

www.pinnaclesys.com

FIX OF THE MONTH

Update For Windows XP

Problem: Microsoft has identified a number of problems that may occur on systems running Windows XP SP2 (Service Pack 2) after installing Security Update 930178 (MS07-021). Several, but not all, of the problems are related to Windows’ behavior or performance as related to the Low Battery Alarm.

Solution: Download and install an 859KB update that corrects the problems that result from installing Security Update 930178. To find the update, go to support.microsoft.com and type **KB940275** in the Search field and click the Search button. From the search results, click the Several Problems May Occur After You Apply Security Update 930178 (MS07-021) On A Windows XP SP2-based Computer Or On A Windows 2000 SP4-based Computer link. Click the Resolution link on the resulting page. Then click Download The Update For Windows XP (KB940275) Package Now. On the next page, click the Download button in the blue Quick Details box. Choose to save the file WindowsXP-KB940275-v3-x86-ENU.exe to your hard drive when prompted. After the download is complete, close all programs that are running, locate the file you downloaded, and double-click it to launch the installer. Follow the instructions on-screen and then restart your computer after the update is installed.

support.microsoft.com

Q & A

Need help with your hardware or software? Looking for simple explanations on technical subjects? Send us your questions!

Get straight answers to your technical questions from *Smart Computing*. Send your questions, along with a phone and/or fax number, so we can call you if necessary, to: *Smart Computing* Q&A, P.O. Box 85380, Lincoln, NE 68501, or email us at q&a@smartcomputing.com. Please include all version numbers for the software about which you're inquiring, operating system information, and any relevant information about your system. (Volume prohibits individual replies.)



Windows

Q My Outlook Express app has become corrupted. Attempting to use the Forward and Reply functions causes the program to close. OE is otherwise functioning normally. I can't find a way to fix the problem by reinstalling OE using the Windows XP installation disc. I can find nothing available through MS Downloads. I'm using WinXP Home Service Pack 2.

A Before trying to reinstall Outlook Express, it's worth taking a moment to run Microsoft's System File Checker. This can help find and replace files that have been corrupted. To run it, click Start and Run, type `sfc /scannow`, and press ENTER. You'll be prompted periodically throughout the process and eventually asked to restart your computer when the System File Checker is finished.

If this doesn't work, you can reinstall Outlook Express by following the steps we

outline. First, make sure that you've written down all of your email settings; it's a good idea to have a full backup of your email in case something goes awry. Microsoft has a Knowledge Base article available at support.microsoft.com/kb/270670 that will guide you through backing up your contacts and email.

Once you've backed up your email and contacts, click Start, Control Panel, and Add Or Remove Programs. Then, click the Add/Remove Windows Components button in the left pane of the window and uncheck Outlook Express. Click Next and then Finish. This will remove Outlook Express from your system. To reinstall it, click Add/Remove Windows Components again, check the box next to Outlook Express, click Next and then Finish. Hopefully this will eliminate the misbehavior you've been experiencing.



This Old Computer

Q I cannot find antivirus and firewall software for Windows 98 Second Edition. Last year I tried the CA security suite but it created problems and I had to remove it. I am currently using an EZ Armour firewall and antivirus software, which is free from my cable provider. However, next week it is switching over to the CA software which I don't want to use. I will be connecting this computer to a router. Will the router firewall provide enough protection? Is there any antivirus software available for Win98SE?

A One of the best antivirus programs we've had experience with is Grisoft's AVG (free.grisoft.com). Grisoft offers a free version that is compatible with Windows 98SE, but warns that it will only be supported until August of 2008. Another option is Avast! Home Edition (www.avast.com). It, too, is free,

and is compatible with Win98SE. One of the benefits of Avast! Home Edition is that it includes protection from spyware and malware.

You didn't mention which make and model of router you'll be using, but most current router firewalls do an excellent job of protecting your computer. For the best protection though, we recommend using both a software and a hardware firewall.

Although we usually recommend users try to get the most out of their computers, we strongly recommend upgrading your computer to a more modern operating system if possible. Unfortunately, your options are limited by Microsoft's decision to cut off support for WinXP in 2009. Your best option may be to go with Vista. Because of the system requirements of Vista, this means you'll probably need to upgrade both your computer hardware and operating system.



Q I have built six Intel-based computers using WinXP. These were all legal copies store purchased and properly registered with Microsoft. Some were full versions of WinXP, and at least one was an upgrade. My problem is that I want to retire one of the computers and install its copy of WinXP on the new replacement computer. Since I didn't write the Product Key on the software boxes for identification when WinXP was installed, I have no way of knowing which copy of WinXP to load on the new computer. If I load the wrong one, two computers will be loaded with the same OS (operating system) software, and I will be in violation of the EULA (End-User License Agreement). When I contacted Microsoft, the technician said that he didn't think there was any way to tell. There

must be a way to determine which copy of software goes to what computer.

A Versions of Windows prior to WinXP stored the Product Key in an unencrypted format in the Registry. However, beginning with WinXP, Microsoft began encrypting the key to protect privacy. This makes it a bit more difficult to solve your problem. Fortunately, the encryption Microsoft uses isn't that robust; there are several free programs available that can retrieve the Product Key for most versions of Windows. We've tried two different tools with success: the oddly named Magical Jelly Bean Keyfinder (www.magicaljellybean.com/keyfinder.shtml) and Winkeyfinder (www.winkeyfinder.com). Both tools are free, can retrieve WinXP Product Keys, and can change them if needed.



Q I am using an HP computer that I upgraded to Windows XP Home Edition Service Pack 2 a year or so ago. It was running fine until a couple of weeks ago when it drastically slowed down. I pulled up the Task Manager and found that agent.exe is consuming 40 to 80% of the CPU constantly. If I close the program, it comes right back. This does not happen every time I start the computer but usually after a few startups, agent.exe is there and running. Agent.exe is in C:\PROGRAM FILES\COMMON FILES\INSTALLSHIELD\UPDATESERVICE. It looks like it's from Macrovision and is version 5.1.100.47363. What makes agent.exe run?

A Agent.exe is a background process that assists the Installshield application in updating software on your computer. Many software vendors use it to update your applications automatically. It's not a malicious program, but the version you have installed has a reputation for consuming system resources at a prodigious rate.

What usually happens is that someone installs an application that uses Macrovision's Update Manager. Update Manager periodically checks the application vendor's site for

patches and updates to the application. It depends on agent.exe to function and will often reinstall agent.exe if you rename it or move it out of its directory.

The easiest way to solve the issue is to find the program that installed Update Manager and disable automatic updating. This does have the downside of cutting you off from automatic application updates, but depending on the application, it is probably a safe course of action. It's also worth visiting the vendor's Web site to see if there are any updates that can be manually applied. They may be aware of the impact of this older version of agent.exe and provide a patch or update to remedy the performance impact of the Update Manager.

If you can't remember which applications you've installed recently, you may have to depend upon a more brute force method: uninstalling the Update Manager completely. Visit tinyurl.com/3rp75t and follow the steps listed there to download the Update Manager uninstaller (also referred to as the SoftwareManagerUninstall.exe). Once downloaded, launch this tool and follow the instructions to uninstall Update Manager. Hopefully, uninstalling the Update Manager will solve your problem.

Frequently Asked Questions

Answers to users' most common questions about **Antivirus**

Years ago, viruses were typically the product of malicious software designers that sought to proliferate maximum damage in the least amount of time—infect and disrupt as many files as possible, as quickly as possible.

FAQ What is a false positive? How do I know if my antivirus software is reporting false positives or actual viruses?

Each known virus has a unique series of program instructions—a footprint or signature—that is inserted into the infected file. Virus-checking software works by scanning a user's files against a large database of these known virus signatures. If a match occurs while scanning a file, the virus checker reports the infected file. The problem with this type of matching is that some uninfected files may contain code fragments that resemble known viruses, prompting the virus checker to flag the file incorrectly. This rare occurrence is known as a false positive.

Unfortunately, there are no reliable ways to distinguish a false positive from an actual infection. In most cases, applications and files reside on a PC for weeks or months with the virus checker running. If a file is suddenly flagged with an infection, chances are that the infection is real. The safest course is to assume that every reported infection is legitimate. Attempt to quarantine or clean the reported file as directed by the antivirus software.

FAQ Where do viruses come from? How often should I scan my computer for viruses? What if the PC isn't running when the regular scanning cycle is scheduled to run?

Viruses have changed over the years. Years ago, viruses were typically the product of malicious software designers that sought to proliferate maximum damage in the least amount of time—infect and disrupt as many files as possible, as quickly as possible. Today, viruses are more frequently proliferated by hackers and organized crime, attempting to remain on systems longer, leveraging known security flaws in operating systems and applications to enter and control victims' PCs to initiate DoS (denial of service) and other attacks. Viruses are most

frequently received today by opening infected email attachments, executing infected downloads, or visiting malicious Web sites.

Most virus-checking software loads into memory at boot time and will operate in the background to protect your PC continuously. Some antivirus programs, by default, are configured to run scans at the same specified time each week, but you can opt to change the time or frequency of those scans as appropriate. Weekly, full-system scans should be more than adequate, but if the PC is not on at the scheduled scan time, the scan will not execute. In that case, feel free to manually initiate a full-system scan yourself.

FAQ What is the difference between viruses and spyware? Is one more dangerous than the other?

Viruses are traditionally fragments of code that insert into files and applications, usually with the intention of proliferating to other files and causing data loss. Spyware constitutes small programs that are stealthily installed on your PC and used to transmit information about you or your computing activities to a third party via the Internet.

For example, a virus may replicate and embed itself into hundreds of files on your system and delete them all, or a virus may enter your system through a malicious Web site and use vulnerabilities in your operating system to let a hacker use your PC to participate in a DoS attack on another company or service via the Internet. By comparison, spyware can lurk on your PC, transmitting your keystrokes and Web browsing habits back to a hacker that can use the information to learn your usernames, passwords, and other personal details that can later be used to steal your identity.

Both viruses and spyware can be dangerous, so it's important to use security software that can guard against both types of malware. ■

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.



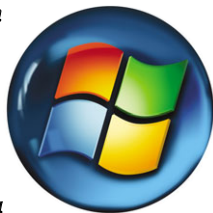
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Philips Web Cam Now Vista-Friendly & Disc Stakka Gets A Repair

About a year ago, I purchased a Philips SPC 900 NC/00 PC Camera. Shortly after, I upgraded my computer to Windows Vista. I asked Philips' tech support if the camera's installation software was compatible with Vista. I also asked if an upgrade for the software was available. After several attempts at getting a response, I managed to get in touch with a Philips representative in Holland who tried to get me an answer, but she didn't have any luck, either. I'm still waiting for an answer, and the Web camera is in a desk drawer.



Name and location withheld.

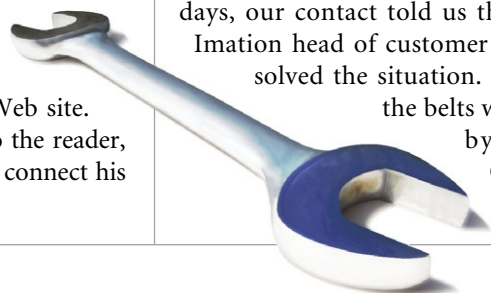
We first searched Philips' Web site for a Vista-compatible driver for the reader's camera. After finding a driver for the SPC 900NC/27, we contacted Philips to ask if this driver was also compatible with the SPC 900NC/00. Within hours, Terry Fassburg, vice president of corporate communications for Philips Electronics North America, returned our message, indicating he forwarded our question to Philips' Consumer Electronics group. Hours later, a representative with the Consumer Electronics division called, saying the SPC 900NC/00 was a plug-and-play device and Vista drivers for the camera were available on Microsoft's Windows Updates servers, as well as on the Philips Web site. After providing this information to the reader, he told us days later he was able to connect his camera and get it to work properly.

In December 2007, I purchased an Imation Disc Stakka for \$99. Around February 2008, it would no longer accept or eject discs. An email to Imation tech support resulted in a reply saying the problem was likely due to grease on the unit's belts or a stretched belt. I also received instructions to replace the belts. I called tech support and asked if there was another option, as I'm not very mechanically inclined and suffer from arthritis. I was told this was company policy and couldn't be deviated from. There's a 12-month warranty on the unit, which was less than three months old when it failed. I have a sales receipt and feel a replacement unit should be sent.

Name and location withheld.

Upon receiving the reader's message, we first checked if he had further contact with Imation since his original message. He sent us a portion of an email from an Imation technician stating "replacing the belts on the unit is the first step to troubleshooting the unit" and "if you still experience the same problem after the belt replacements, then we are able to replace the unit if you still have a copy of the sales receipt." We, too, felt it odd a customer be required to replace failing drive belts, so we emailed our Imation contact and Imation's corporate office. Our contact quickly told us the situation was being looked into, while Terry McCain, Imation senior technical support specialist, called to also inquire about the situation. Within days, our contact told us that Mike Clancy, Imation head of customer support, had resolved the situation. He reported that

the belts would be replaced by Imation at its Cerritos, Calif., location. ■



Unsound Mind (& Body)

I was *this* close to buying new computer speakers. I've talked about getting a new set for ages, but this time I meant it. I even had a good reason. The sound coming out of my current 5-year-old JBL Creatures was terrible. The Chinese jazz phenom I discovered via NPR sounded muffled and muddy—it was clearer on my MP3 player's radio. And I had to crank the volume just to make out lyrics from even old favorites on XM. So there I was, ready to drop another hundred bucks, when good sense took over. What if something else was really causing the problem?

I'd made the classic mistake of blaming the problems from a chain of computer parts on the piece at the very end. The sounds that eventually make their way out of your computer's speakers are just the audible manifestation of a long and complicated series of interactions, any of which can significantly affect the outcome. Before you get carried away buying fancy new speakers or curse the quality of downloaded music too loudly, check for some other culprits.

For one thing, my sound card drivers were ancient. Outdated drivers can cause all kinds of compatibility problems with both hardware and software. I'm always amazed at how out of date most people's drivers are, including my own. Windows XP can check online for updates from the Device Manager. Click Start, right-click My Computer, select Properties, and navigate to the Hardware tab to find the Device Manager button. Then, right-click the device you want to check, select Update Driver, and walk through the downloading and installing options. Even if nothing turns up, it's probably worth checking your manufacturer's Web site to see if it has posted any updates that Microsoft doesn't have available for download. The drivers weren't causing all my problems, in the end, but they weren't making it any easier for my hardware and OS (operating system) to generate clear audio.

It's also worth checking your sound card's diagnostic software, if there is any. Separately installed sound cards almost always come with such software. Our main personal computer uses the sound card built into the motherboard, and it comes with a little utility controlling settings and offering diagnostic tests. I'd never even noticed this tool until

I started searching out ways to mess with my audio settings. As it turned out, the utility had a little equalizer and volume/balance settings that were off-kilter. It wasn't my only problem, but things were sounding better already.

Digging a little deeper into troubleshooting, I discovered that the same songs sounded a lot better in Windows Media

Player than in iTunes. I normally use iTunes, because it makes it easier to search and catalog music without spending days managing ID3 tags, but I'd just assumed it was set up properly. After making sure I had the most up-to-date version of each, I started exploring the settings for both applications. Sure enough, there was another equalizer in iTunes (available under the View menu), which was set to some crazy combination. I was able to modify both programs (for WMP, choose Graphic Equalizer under the Enhancements section of the

View menu) and get things sounding right again. Obviously, settings differ among applications, but a Tools, Options, or Preferences menu item is usually the best place to start.

Finally, I decided to make sure all the physical connections and settings related to my speakers were working properly. If, like me, you have a tangle of wires running from the back of your PC and behind your desk, there's lots of opportunity for loose connections and cross-wire interference. I disconnected and reconnected all the various jacks between my speakers and subwoofer and between the subwoofer and sound card. I also tried to keep my speaker cables as far from the other wires (like my phone cord and printer cable) as I could.

In the end, many apparent speaker sound problems are actually rooted in basic computer issues. Mine were. If you want new speakers, though, by all means use any excuse. And if you're going to the store, I won't turn down a new set, either. ■

BY GREGORY ANDERSON

Gregory Anderson is a regular contributor to Smart Computing and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of the time. Share your audio angst at gregory-anderson@smartcomputing.com.





LinkStation EZ

\$199 | Buffalo Technology | www.buffalotech.com

If you need to regularly share and back up the data from your computer, NAS (network area storage) is the way to go. And unlike NAS appliances that require you to configure complex network settings, the 500GB LinkStation EZ lets you set up the appliance on your home network in four simple steps. You connect the power cord to the LinkStation EZ and run the included Ethernet cord from your router to the appliance's Ethernet port. Then, you install the Buffalo configuration software, which automatically sets up the network settings on your PC and shares the LinkStation EZ with other PCs on the network. Next, the configuration software installs Buffalo Navigator and instructs you to select the files you want to transfer and store on the LinkStation EZ. Lastly, the Buffalo Navigator software allows you to give other PCs on your network access to the stored files.

In our tests, the LinkStation EZ setup took a little more than three minutes, and we were sharing files within five minutes. We also like how easy it was to share the NAS with the other computers in our network. The \$199 price tag is affordable for a 500GB NAS appliance, so we suggest the LinkStation EZ for anyone looking to share, store, and back up large collections of data on his network. ■

by Nathan Lake

2.5-inch External Hard Drive 300GB

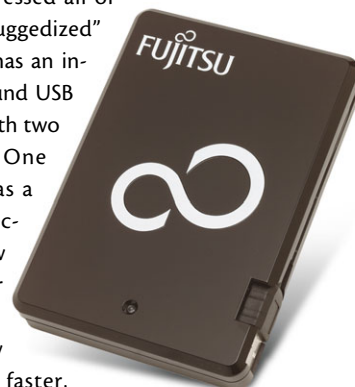
\$230 | Fujitsu | www.fujitsu.com/us

Laptop users want a lot in a portable backup drive. They want enough capacity to back up an entire notebook, plus disaster recovery software to bring the system back from the dead. They want a tough drive that can handle the impacts of a mobile user's life. And they want a drive that gets its power from a laptop's USB port, not a separate AC adapter.

Fujitsu has addressed all of the above. This "ruggedized" 300GB hard drive has an integrated, wrap-around USB cable and comes with two short extensions. One extension cable has a second USB connector that can draw additional power if necessary.

Toshiba's new 320GB is cheaper, faster, slimmer, and more spacious, but the Fujitsu's shock mounting and much more comprehensive software bundle count for a lot. ■

by Marty Sems



Drive GPS 150

\$199.95 | Pharos | www.pharosgps.com

Budget-minded customers can now enjoy the convenience of GPS navigation, thanks to the Pharos Drive GPS 150. Available in your choice of pink, blue, or black finishes, this compact GPS device measures just 3.94 x 3.31 x 0.95 inches (HxWxD). In addition to turn-by-turn, voice-prompted navigation instructions, you can also use the device to find nearby points of interest or navigate a city by foot. What's more, the Drive GPS 150 has text-to-speech, a feature not commonly found in entry-level GPS devices. Text-to-speech announces the names of streets, letting you keep your eyes on the road. The Drive GPS 150 comes with everything you need to start navigating out of the box, including maps of the entire United States. ■

by Jennifer Johnson

EZ-DUB 20X External DVD RW

\$69.99 | Lite-On | www.liteonit.com

Simplifying the most common burning tasks, Lite-On's EZ-DUB shines brightly. This USB 2.0, 20X DVD burner features two neat buttons.

Press Dub, and the EZ-DUB will copy unprotected discs with minimal prompts on the computer screen. If you have a second CD/DVD drive installed, the EZ-DUB can copy from one to the other.

The File button lets you select files you want to back up and drag-and-drop them to an on-screen icon. When you're ready, the drive will write the files to disc. Easy!

The EZ-DUB comes with Nero 7 Essentials for most other CD and DVD burning duties. It has a one-year warranty. ■

by Marty Sems





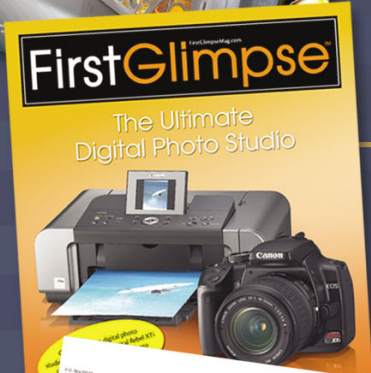
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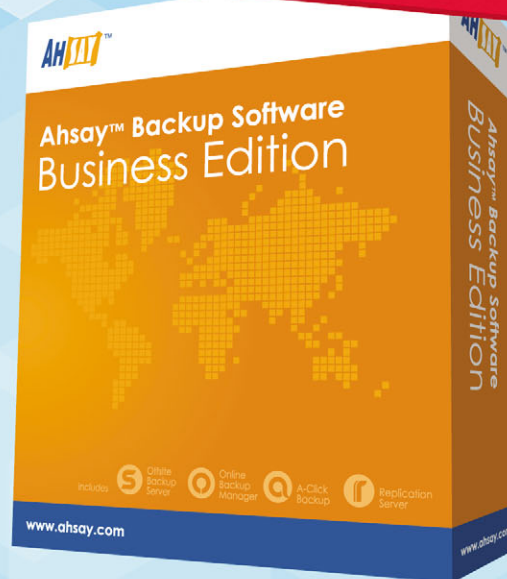
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